General Surgeon, Dr B

A Report by the

Health and Disability Commissioner

(Case 05HDC10177)

Parties involved

Ms A	Consumer
Dr B	Provider/General surgeon
Mrs C	Consumer's mother
Ms D	Consumer's aunt
Dr E	General practitioner

Complaint

On 8 July 2005, the Commissioner received a complaint from a Health and Disability Consumer Advocacy Service about the services provided to Ms A by general surgeon Dr B. The following issues were identified for investigation:

- *The appropriateness of the preoperative assessment, breast reduction surgery, and postoperative management provided by general surgeon Dr B to Ms A between January and March 2005.*

- *The appropriateness and adequacy of the information and preoperative counselling provided to Ms A by Dr B prior to her breast reduction surgery on 15 February 2005.*

- *The appropriateness and adequacy of the information provided to Ms A by Dr B on and after 15 February 2005 in relation to:*
  - *the outcome of her breast reduction surgery*
  - *her postoperative management.*

An investigation was commenced on 17 August 2005.

Information reviewed

Information received from:
- Ms A
- Mrs C
- Ms D
- Dr E
- Dr B
- A District Health Board

— Medical Council of New Zealand.

A copy of Ms A's claim file was obtained from ACC. Independent expert advice was obtained from general surgeon Dr Garth Poole and consultant plastic surgeon Dr Sally Langley.

Summary

This complaint is about the breast reduction surgery performed by general surgeon Dr B on Ms A, aged 37 years, on 15 February 2005. Dr B elected to perform a Lejour breast reduction on Ms A. He described the surgery as uneventful, and the resulting reduction, size and shape as satisfactory. However, by 21 February 2005 Ms A was experiencing breast pain, and a substantial amount of fluid was leaking from the wounds. Areas of Ms A's breasts became ischaemic and necrotic. Dr B dressed the wounds daily and debrided dead tissue, but on 16 March 2005 Ms A's general practitioner referred her to a plastic surgeon for a second opinion. Further surgical debridement was required and she was advised that she may require additional surgery in the long term.

Information gathered during investigation

In December 2004, Ms A contacted a private hospital to make enquiries about breast reduction surgery. Ms A was sent an information pack. She talked with her family about her wish to have breast reduction surgery. In mid-January 2005 she telephoned the private hospital to make an appointment to see general surgeon Dr B.

Preoperative consultations

On 24 January 2005, Ms A attended her initial consultation with Dr B to discuss breast reduction surgery. Dr B told her what the surgery entailed, how it was done, what outcome to expect and the possible complications. Dr B noted that Ms A was overweight and recorded, "Would like to be a size 'D' — weighs 102kg and has lost 20kg".

Ms A confirmed that Dr B explained the surgery and asked what size she wanted to be. Ms A was a large 20GG size. Ms A knew she had to be realistic about the reduction and that what she wanted might not be obtainable. The outcome had to be in proportion to her overall size and able to be achieved safely.

Dr B asked Ms A to complete a medical history form. Ms A recorded that she smoked 8 to 10 cigarettes a day and that she was taking oral contraceptives and medication for high blood pressure.

After Dr B examined Ms A, he told her that a "D" cup size was achievable. The cost of the surgery was discussed, and Dr B told Ms A that the fee for the surgery was $9,000, "payable before the operation". Dr B booked in Ms A for the breast reduction surgery on 15 February 2005 at the private hospital.

Dr B stated that he provides his patients with photographs showing the results of his surgery, and is "fortunate in having patients who have had this surgery who are willing to talk to prospective patients and in some cases even showing the results". He provides his patients with a copy of an article about vertical mammoplasty written by Dr Madeleine Lejour (see Appendix A), which explains the potential risk of infection, necrosis and scarring. He said that he discusses all this in detail with his prospective patients.

In response to the provisional opinion, Ms A stated that she checked the information material she had been given by Dr B prior to the surgery. The Lejour article was not included.

Ms A said that she had done some reading about breast reduction and appreciated the need to maintain body proportion. She does not recall having any discussion with Dr B about potential risks. She said that when she enquired whether the fact that she smoked would be a risk for the surgery he appeared unconcerned. Ms A asked about what complications could arise with this type of surgery, and Dr B replied that complications, such as infections, can occur with any surgery and are relatively rare. He said that Ms A might require some "touch-up" surgery, but that it could be done under local anaesthetic.

In response to the provisional opinion, Dr B stated:

> "When I discuss risk of operative procedures, I do tell patients that the medical literature reports that all these factors (being overweight and/or smoking) increase wound infections and delays in healing along with other complications like chest infections or pneumonia. … Where I am uncomfortable with the physical and mental state of a patient I will refuse to operate. …
>
> I go over in detail the risks of this operation, and I tell every patient that this is major surgery and really a subtotal mastectomy of both breasts and rearranging the leftover tissue. I detail the complications, which can and do happen. I encourage patients to speak to my previous patients who have had this surgery. I have never told a patient the complications are rare."

Dr B made an appointment for Ms A to see him for a preoperative consultation on 7 February 2005. At that consultation Dr B re-examined Ms A and told her what to

expect when she arrived at the hospital for her surgery. His notes for that consultation state that he prescribed a chlorhexidine antiseptic wash (which Ms A was instructed to use for the two days prior to surgery) and an antibiotic, Ciproxin, which Ms A was to start taking from 14 February 2005. Dr B also noted that Ms A had spoken with one of his previous breast reduction patients about the surgery.

At her second visit, Ms A talked to one of Dr B's patients. Ms A is unable to recall much about the conversation with this patient, except that Dr B asked the woman if she would mind showing Ms A the results of the surgery. Ms A stated that Dr B gave her details of the preoperative preparations for surgery. She recalled that when he described how he would perform the surgery, she said, "I don't need to know the graphic details."

On 13 February 2005, Ms A received a telephone call from the private hospital to inform her that her surgery had been brought forward from the afternoon to the morning list. She was asked to arrive at the hospital at 8.30am.

The private hospital — 15 February 2005
When Ms A was on her way to the hospital on the morning of 15 February 2005 she was telephoned by Dr B asking her if she could arrive half an hour earlier at 8am. This was because the anaesthetist wanted to start earlier.

On arrival, Ms A was shown to her room and advised that Dr B would arrive shortly to mark her up. After the admission procedures were completed, the hospital receptionist arrived to collect the cheque.

Dr B arrived and explained to Ms A how he would measure and mark up her breasts for surgery. Ms A stated that he produced a plastic milk bottle top, a tape measure and two marker pens, black and red. He explained that the milk bottle top was to outline her nipple position. Dr B started the marking by measuring from the median points of her clavicles to the nipple on each breast. He explained again the procedure he would undertake to reduce her breast size, which she thought of as a "teddy-bear nose". Ms A took photographs of the markings.

The anaesthetist saw Ms A and explained his plan for her anaesthetic. Ms A then walked down to the operating theatre suite.

Dr B performed a Lejour vertical mammoplasty on Ms A. This technique uses adjustable markings, an upper pedicle[1] for the areola, and a central breast reduction with lower skin undermining. It appears that Dr B removed approximately 2.3kg of tissue from each breast. The tissue was sent to the laboratory for histological examination. Dr B stated that the amount of tissue to be removed is known only after

[1] A narrow folded tube of skin by which means a piece of skin used for grafting remains attached to its original site.

the event. He said, "We do the necessary reduction but how much tissue is removed is variable and one cannot accurately pre-guess. The surgery was uneventful. Reduction and post-op size and shape were satisfactory."

At the conclusion of the surgery, the routine equipment count revealed that a gauze swab was missing. Dr B was informed. The "Intraoperative Nursing Record", showing the start time of Ms A's surgery as 9.15am and the finish time as 1.10pm, noted the post-operation count to be "Incorrect — 1 small gauze 10cm x 10cm missing. Surgeon notified." The incorrect swab count was also noted on the "Intra Operative Care" form, which noted that the missing swab was "not accounted for".

Initially, Dr B stated that he does not use this type of swab anywhere near the wound while doing breast reductions, and that no swab was lost in Ms A's wound. In response to the provisional opinion, Dr B stated that these swabs are small, and used only for skin preparation, and that he does not use them "near the operative site". Dr B's recollection of the circumstances of the missing swab appears to be incorrect. He said that he did two breast reductions that day, and after the second breast reduction the scrub nurse said that she could not account for a small gauze swab, 10 x 10cm, which is the type used for cleaning the skin before surgery. However, it is clear from the records that the swab was found to be missing at the conclusion of Ms A's surgery, which was the first surgery for the day. Dr B stated that when the swab count was found to be incorrect, the private hospital protocols were followed.

The histology report on the tissue removed from Ms A's breasts states that the tissue specimen from the left breast weighed 2308g, and the two specimens from the right breast weighed 1170g and 1038g. No abnormalities were detected in any of the tissue specimens. An X-ray performed on 24 February (9 days later) also showed no abnormality.

Postoperative care

Ms A said that when she returned to the ward from the theatre and attempted to get up to go to the toilet, she vomited over her wound dressings. After the dressings were replaced, Ms A slept until her grandmother visited at about 7pm. Ms A and her grandmother went outside for a cigarette. Ms A had no further nausea or vomiting during the night.

Dr B stated:

> "I saw [Ms A] postoperatively on the same day as her surgery, 15.02.05, in the pm. Then I saw her again the next day, 16.02.05, prior to her discharge.
>
> [Ms A's] drain was removed … prior to her discharge. … She had 100ml of drainage by 5pm on the operation day and there was no further bleeding. I personally remove the drains myself or I am present when staff remove drains. Haemovac bags are emptied and measured and suction maintained if needed by the registered nurse looking after the patient. I provide a personal service and keep a

close eye on drains/dressings etc. There was no drainage at all the next day and the drain was removed prior to discharge. I make these decisions.

We dress breast reduction wounds with first a layer of sofratulle/next layer of sterile guaze/combine dressings 20cm x 30cm x2. We use Medipore 10cm width for support till we use the patient's new bra. We supply sterile combine dressings and tell patients to reinforce these over our dressing, but not to take the dressings off or change them themselves. If there is any undue bleeding or discharge we ask the patients to phone and come and see us at the hospital. I also see patients at home if necessary."

Ms A recalled that when the drain was removed, the drainage bottle was full. However, there is no record in the clinical notes of the amount of drainage from her wounds.

Ms A was discharged from the private hospital with instructions to return the following day to see Dr B so that he could check the dressings.

Postoperative follow-up
Dr B's records show that he saw Ms A almost daily until 21 February 2005, and that her recovery was proceeding as expected. Ms A stated that her aunt, Ms D, transported her to the first of her postoperative appointments, but when this conflicted with Ms D's work commitments, Ms A drove herself to the private hospital.

Ms A stated that her breasts began to be sore on 21 February 2005, and when she saw Dr B on 22 February 2005 she was changing the dressings every two or so hours because of the amount of fluid leaking from the wounds.

On 22 February 2005, Dr B recorded that Ms A had some swelling and redness of her left breast. He aspirated pus from the breast and sent a sample to the laboratory for testing. The laboratory informed Dr B that the pus swab cultured a heavy growth of Group B haemolytic streptococcus, and a moderate growth of anaerobic gram-negative bacillus. On 24 February 2005, Dr B noted that Ms A had an infection in both breasts, which were discharging. Ms A stated that she was feeling "lousy". She said that her breasts were leaking profusely and that showering was an "ordeal". She was using sanitary pads to reinforce the dressings. Dr B commenced Ms A on a course of the antibiotic Augmentin, and arranged for her to have an immediate chest X-ray, which was reported as normal.

The X-ray was performed next door to Dr B's rooms. Ms A recalled that when she returned with the X-ray, Dr B examined it and told her that there was no problem. She asked why the X-ray was needed, and Dr B told her that the swab count in the theatre the day of her surgery had identified that a swab was missing, and he thought that this might be the cause of the condition of her breasts. Dr B confirmed that the X-ray was taken to eliminate the possibility that the swab was retained in the wound. He provided a copy of the X-ray report showing that no abnormality was seen in the chest.

On 26 February 2005, Ms A went to an accident and emergency clinic. A mosquito bite on her leg from two days earlier had become infected. Ms A's left leg was red and throbbing. She waited from 8.45am until 10.30am, before leaving without being seen. Ms A was feeling very unwell, so she went to see her general practitioner, Dr E. He had no available appointments, so she went to a medical centre and saw a doctor who gave her a course of antibiotics for her leg. She recalls telling the doctor that she also had an infection in her breast reduction wounds, but he did not examine her breasts. Dr B stated that Ms A did not inform him of these events.

Dr B said:

> "Because of [Ms A's] weight and smoking she had been kept on prophylactic antibiotics. In spite of that she developed a wound infection and gross fat necrosis; infections spread to the right breast and both breasts developed a profuse pus discharge. She also developed marked cellulitis on her thigh from a mosquito bite. This was a rapid and gross infection and I contacted our pathologists with my concern that the infection was not settling in spite of removing all stitches and letting the wound drain and removing dead necrotic tissue."

Ms A recalled that her breasts smelt very bad. She contacted Dr B, who asked her to come to the hospital at 5pm so that he could examine her. He removed some stitches and, when Ms A expressed her concern about the condition of her breasts, he reassured her and told her that the healing would take time, and that she was to look to the future. Ms A said that he then cut away some "dead flesh". She said, "He used no anaesthetic, as he said he needed to know when he hit live flesh. I was crying and visibly upset."

In response to the provisional opinion, Dr B stated that he did not want to debride healthy tissue, only dead necrotic tissue. He said that debriding dead tissue is not a painful procedure and he does not recall Ms A crying through every debridement. Dr B stated that his receptionist does not recall Ms A showing any signs of being distressed either. He said that if he had thought the treatment needed to be done under general anaesthetic, he would have done so.

Ms A had further appointments with Dr B on 27 and 28 February 2005. When Dr B started debriding the necrotic tissue at subsequent dressing appointments, Ms A asked her family members to accompany her to appointments for support. Ms A recalled that her sister accompanied her to one appointment, and her mother went with her on two occasions. Ms A said that there were occasions when her grandmother went with her, but as she is elderly she waited outside in the waiting room.

Ms A stated that she was concerned about Dr B's practice when he redressed her wounds. She said that there were occasions when he put soiled dressings back on, and used equipment that had been sitting out on a bench. Dr B denied this. He said that the private hospital has a sterile supply, and ample sterile instruments. He said that when he uses instruments he washes them himself before putting them aside for one of the

nursing staff to process for sterilisation. He said that they do not "skimp" on dressings at the private hospital, and always supply the necessary dressings to patients. Dr B stated that he supplied Ms A with "sheets of gamgee" to reinforce his dressings. The gamgee sheets are "clean but not sterilised". He said that he has taken advice from a Ministry of Health's policy advisor on infection control, about the correct procedure regarding dressing techniques. The Policy Advisor indicated that there is "no need to use sterile dressings on infected and discharging wounds and sterile dressings have no influence on infected wounds". Dr B stated, "I do not accept that I used soiled dressings."

On 24 May 2006, the Policy Advisor was asked to confirm whether he had provided Dr B with advice on infection control issues. The Policy Advisor stated that he advises the Ministry of Health on infection control issues and health care facilities in the area. He said he discusses antibiotic treatment of particular infections and prophylaxis with Dr B during a consultation, but these are informal discussions. He said that he "vaguely" remembers talking about wound dressings with Dr B. The Policy Advisor had not been formally approached by the private hospital to advise on infection control.

Dr B stated that he was concerned that Ms A's infection might be caused by Streptococcus A and necrotising fasciitis. On 28 February he recorded that he spoke with a pathologist about his concern that Ms A's infection was not resolving "in spite of all the efforts and antibiotics". The pathologist suggested that Dr B send a specimen of necrotic tissue to for them to culture. Dr B sent a specimen as requested, and the necrotic tissue was cultured, but there was no evidence of Streptococcus A or necrotising fasciitis.

On 1 March 2005, Ms A recorded in her diary:

> "[I] really dread visits now, I am in tears and shaking as I head into the waiting room. [Dr B] still taking stitches out and cutting away rotten flesh, visits are sometimes ¾ hr long. I feel as though its torture mentally and physically. The discharge is constant. The snip, snip, snip is driving me insane. I cried right through visit. He tells me to take these tablets — Valium. I don't want to take them as they knock me out. He gives me a handful in an envelope and tells me to take them every couple of hours. He needs to have a radio in here so I don't have to listen to the snipping."

Dr B denied that he gave Ms A Valium tablets. He said that he does not keep a supply of Valium and has not prescribed this medication to any of his patients for 20 years.

On 1 March 2005, Ms A told Dr B that she wanted to go to her own doctor. Dr B recorded Ms A's request and that he had told her "that is fine, but I still want to look after [Ms A] until her wounds heal".

Ms A saw general practitioner Dr E on 1 March for a gynaecological treatment. Dr E noted Ms A's breast infection and phlebitis of her left leg, and that she was taking Augmentin and flucloxacillin for a confirmed streptococcus infection. He recorded that the breast wounds were draining copious quantities of fluid and that she was seeing Dr B for daily dressings.

On 2 March, Ms A asked her aunt Ms D to go with her to that day's appointment with Dr B. Ms D recalled that all through the procedure Dr B told Ms A that she was "OK". He was gentle and caring but Ms D was surprised that there was no nurse present. She recalled that Ms A was lying on the bed crying and shaking. The next time she accompanied Ms A, on 4 March 2005, there was a nurse present. Ms D stated that Ms A was "in a right state and didn't want anything done". Dr B told Ms A that he had to cut out the dead tissue and asked the nurse to give her a sedative, which Ms A refused. He noted that the infection "seems to be static". When Dr B left the room, the nurse talked to Ms A about the importance of exercise and good diet. At both appointments Ms D queried the extent to which Ms A's breasts would ever appear normal, and was assured by Dr B that once the wounds had healed he would do whatever was necessary to make them look good, and that they would be "nice looking breasts". Ms D stated:

> "All through this whole process I couldn't understand why a district nurse was not assigned to [Ms A]. The dressings were being done by my mother (78) and [Ms A]."

Dr B stated that he does all the dressings himself. He said that he has done so for 30 years "without complaint". Dr B said that he does not use district nurses, "because I do not know them and I don't know what standard of care they provide or whom they are responsible to". He does have a nurse to assist him if needed, or if the patient requests a chaperone. Dr B stated that most of his patients do not want a chaperone because their situation is a "private matter". He said that there is always a female member of staff in hearing distance, and he is happy for patients to bring a family member or friend with them to the consultations if that is what they choose to do. He said that if patients are having difficulty understanding, he encourages them to bring someone to ensure that they are fully informed.

In response to the provisional opinion, Ms A stated that she recalls that on at least two occasions when she arrived at the private hospital for dressings there was no one in the building except herself and Dr B. Dr B unlocked the building and deactivated the alarm before they entered.

Mrs C stated that she accompanied her daughter on two visits to Dr B. The first time was 5 March 2005. She said she was in the room when Dr B told Ms A that he wanted to cut away more tissue. Ms A started to cry and said, "No. No I've had enough of this." Dr B responded that he would not cut while Ms A was in that state, but he would have to do so next week. However, while he was looking at Ms A's wounds he started to debride. Ms A cried out, "No more. No more." Dr B stopped

debriding. Mrs C recalls that her daughter was crying and trembling for some time after she left the hospital. Dr B does not accept that he cleaned and debrided the wound against Ms A's will and while she was crying with pain.

Ms A recalled that she saw Dr B at the earlier time of 9.30am on 5 March 2005. He examined her breasts and took a swab from the wound for laboratory analysis. He recorded that the discharge was settling. Ms A recalled that Dr B asked her if she could drop the specimen off at the laboratory, as he wanted to get to the cricket by 10am. Ms A delivered the specimen to the laboratory as requested.

Ms A saw Dr E on 7 March 2005, and told him that she felt there had been no progress in the healing of her breast wounds. Dr E agreed that his practice nurse would do the dressings, and recorded that he discussed Ms A's situation with a local consultant surgeon who suggested that Dr E speak with a consultant plastic surgeon. Dr E spoke to the consultant plastic surgeon who agreed to assess Ms A at his next clinic on 16 March 2005.

Dr E's notes of 9 March 2005 show that he discussed Ms A's issues that day with Dr B, who agreed that Ms A could have her daily dressings done by Dr E's practice nurse. Dr B informed Dr E that he had put "stay sutures at top of wounds" and wanted "2 weekly review at his rooms".

In response to the provisional opinion, Dr B stated that when he saw Ms A for the last time, she had already been to see Dr E and had had her dressings redone. He said that as he did not want to interfere with Dr E's treatment, he checked the wound and left the dressings as they were. Dr B stated that by this time the infection was settling, and his plan was to take her to theatre on his next theatre list to "clean and close the wound".

Dr E sent a referral note to the consultant plastic surgeon on 9 March 2005. Dr E informed the consultant plastic surgeon:

> "Recent swabs deny infection, but tissue debridement has isolated strep infection within the tissue removed and she continues upon antibiotics appropriate to the sensitivities.
>
> [Dr B] has inserted sutures to the outside of the inferior breast cavities, although these considerable bilateral cavities are by no means closed and allow access for daily saline dressings.
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> Her current management is thus one of infected surgical wounds.
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> [Ms A] is dismayed at the result of her cosmetic surgery. Sadly she has lost confidence in further treatment at [the private hospital]. She is now aware that she will need some form of reconstruction once the infection has fully settled.

> She has asked to be referred to you as an expert in this field and begs your understanding of her situation, respectfully seeking your opinion and advice."

On 14 March 2005, Ms A's notes from the private hospital record that she telephoned and left a message with reception for Dr B. Ms A said that she would not be able to make her appointment for that day. She reported that her wound was "a lot cleaner" and that she would telephone again to make an appointment for the following week.

The consultant plastic surgeon saw Ms A on 16 March 2005. He wrote to Dr E to inform him that his assessment and advice was that Ms A "requires formal exploration to remove the residual necrotic tissue and clear out the infection. She may well require ongoing dressings to allow the wound to heal by secondary intention and may require additional surgery in the long term." The consultant plastic surgeon arranged for Ms A to be urgently admitted to a public hospital.

On 18 March 2005, Ms A was contacted by the private hospital to make a further appointment for her to see Dr B. Ms A stated that she would not be returning to see Dr B.

Additional information

Dr B
Dr B stated:

> "There is no other option than breast reduction surgery if one wants smaller breasts. My experience is that patients who have lost weight complain that there has been no significant reduction in breast size. In recent years I have done vertical mastopexy which avoids large inframammory [below the breast] incisions and my patients have been extremely happy with the results and I have not done a partial amputation and nipple transfer as it is not free of complication either.
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> In 2002 I went to [a conference] and there was a lecture by a senior surgeon who has done 4000 breast reduction operations and his comments were that there was no one universally satisfactory operation for every breast reduction and he was particular in emphasising that even after 4000 operations he could not say who would and who would not get complications. I have attended courses on breast reduction surgery in LA in 2002, Sydney 2003 and Melbourne 2004 and Brisbane 2005. Recent literature on this subject confirms breast reductions with superior and medial pedicle gives a better blood supply to the nipple and areola. …
>
> I tell patients how I do vertical mastopexy [surgery to correct a pendulous breast], and the complications which can happen and remedial surgery which might be needed. I tell patients that in the case of large breast reductions one may need

> additional small transverse inframammary [incision below the breast] or L shaped lateral extension but I don't perform T incisions anymore.
>
> [A hand-out, "Patient Information — Breast Reduction",] is given to patients and explains all of the potential risks of infection, necrosis and scarring, which I discuss in detail as well. The risks are seromas, haematomas, infection, and partial areola necrosis, delayed healing of the skin and glandular tissue. My experience with these have been delayed healing, ie. healing taking 4–6 weeks and wound infection needing antibiotics and this has been a major factor. I have had overweight patients, ie. over 80kgs, patients with auto-immune disease, patients on cortisone, patients on long-term anti-inflammatory medication, patients who smoke and who have had problems with delayed healing, and they have accepted the risks and complications and have been happy with the outcome.
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> [Ms A] advised me that she wanted to get to a size 'D' which we managed and she was happy with the immediate post op result. She has told myself, my staff and [one of my previous patients] that the result was satisfactory."

Ms A

A Health and Disability Advocacy Service advocate stated in her complaint report:

> "[Ms A] advises that she has not only lost her relationship through this experience but suffers a physical disability, she is unable to conduct certain household chores and has had to take two months off work. She further states she had lost all trust in all medical professionals. [Ms A] advises she is now unsure of her decisions and is now very conscious of her body in public whereas before she had total confidence. [Ms A] advises she is unable to sleep at night and is constantly tired. [Ms A] states that she does not feel like a woman anymore and that she will be unable to breast-feed a baby because of the nerve damage and the fact that her nipples have rotted off. [Ms A] advises that she is extremely depressed and emotional. … She suffers panic attacks and is terrified at the prospect of more surgery. She is constantly seeking approval from others and does not trust her own judgement."

ACC

On 30 June 2005, the ACC Medical Misadventure Unit informed Ms A that her claim had been accepted as medical error. The decision was based on the independent expert advice provided to ACC by consultant plastic surgeons Dr Sally Langley and Dr Tristan de Chalain.

Dr Langley summarised her advice to ACC as follows:

> "In my opinion the wrong breast reduction operation has been performed on [Ms A]. The Lejour vertical breast reduction technique is technically difficult and is usually only undertaken by experienced plastic and reconstructive surgeons on patients needing smaller reductions and who have less ptotic [drooping] breasts.

> Other techniques of 'pedicled' breast reduction could also have resulted in a similar outcome because of the long distance from the chest wall to the nipple. The recommended technique for such an indication would be the amputation and free nipple graft technique after full discussion. …
>
> [Dr B's] care of [Ms A] following the surgery and during the complications has been attentive but [Ms A] has been traumatised by the pain, discomfort, and uncertainty in the process."

Dr de Chalain summarised his advice to ACC as follows:

> "[A]s a plastic surgeon who has completed a post-graduate breast fellowship under the late Professor John Bostwick, a noted world authority on breast surgery, and who performed breast reductions under Dr Madeleine Lejour herself, … I would have to say that the Lejour pattern of breast reduction was inappropriate and the wrong choice for a woman with a sternal notch to nipple measurement of 49cm. Simply put these breasts were simply too long, pendulous and large to undergo anything other than a breast amputation and free nipple graft (Thoreck procedure or similar). The chances of the nipple-areolar complexes (NACs) surviving on a pedicle of the length described are minimal and indeed the truth of this is apparent in the photographs of the breasts taken on day one post-op when it can be seen that the NACs are already frankly ischaemic. Even Lejour herself would not undertake a reduction like this without significant modifications to her technique, as outlined in her paper, 'Vertical Mammoplasty for Breast Hypertrophy and Ptosis'. It is also apparent that such problems with his technique are not isolated events; apparently all [Dr B's] patients are told that touch up surgery is likely to be required.
>
> …
>
> I find that [Dr B's] performance has been below the reasonable standard of care throughout this case. As stated, I believe that there was inadequate patient preparation or counselling pre-operatively, inappropriate selection of breast reduction technique intra-operatively and woefully inadequate (not to say negligent) aftercare. To proceed with unsterile dressing changes and wholly inadequate bedside debridement for three weeks is not acceptable practice. This woman should have been taken back to the operating room for formal surgical debridement and washout within the first days of her presentation with necrosis, infection and discharge."

Dr B advised that in July 2005 he had put in place "the process of challenging the opinion of the advisers to ACC and asking for a review".

On 17 February 2006, ACC advised that, to date, they have not received a request from Dr B for a review of their decision in this matter. ACC allows three months from the time of decision for applications for a review to be lodged. (Ms A has applied for a

review of the entitlements granted to her. Ms A's hearing was set for 14 March 2006, but I have not been advised of the outcome.)

Independent advice to Commissioner

General surgeon advice
The following expert advice was obtained from general surgeon Dr Garth Poole:

"My name is Garth Poole I hold the following positions and qualifications:

- General Surgeon and deputy HOD CMDHB
- Director of the CMDHB Breast Service
- Past President of NZAGS
- National Supervisor of Basic Surgical Training
- FRACS MBChB

To form my opinion I have reviewed the following documents provided by the HDC:

1) Introductory documents from HDC

2) Documents A, B, C, D, E, F and G comprising of 194 pages. I have also accessed the mainstream surgical literature.

1. Did [Dr B] provide [Ms A] with an appropriate standard of care?

No. Whilst the care has been good in many areas, the judgement and decision making have been poor. The outcome has been below the acceptable standard.

2. Was [Dr B's] preoperative examination and assessment of [Ms A] in January 2005 of an appropriate standard? If not, why not?

Yes, the preoperative examination and assessment was sufficient. The preoperative information was reasonably extensive. There were two consultations. A chance was offered to meet another patient.

Written material existed on the consent form.

Excellent general written information was also available and, although there is some dispute as to whether [Ms A] received this, she does mention an information pack arriving before Christmas.

[Ms A] states in her diary that risks were discussed and she did recall explicit surgical details described by the surgeon preoperatively.

Fees were discussed.

The surgeon showed respect for infection with a two day preoperative preparation.

This expert has no doubt that [Ms A] was aware of the aims of surgery. She was also aware that this type of surgery has some 'minor' complications.

3. Was the information [Dr B] provided to [Ms A] about her options for surgery adequate? If not, why not?

No. Her height to weight ratio, her smoking and her borderline diabetes meant that she needed the safest operation possible and to have low postoperative expectations.

The operation as planned had a very high chance of complications.

Either a different operation should have been offered or the consent process should have estimated a greater than 50% chance of major tissue loss postoperatively.

4. Should [Dr B] have recommended a Lejour breast reduction on [Ms A]? If not, why not?

Extensive training and experience in pedicled plastic surgical techniques would be required to attempt the extent of reduction attempted here. Many experienced breast reduction surgeons would have low expectations in this case and few would choose the Lejour technique. [Ms A] presented an enormous technical challenge due to her risk factors mentioned above.

The Lejour vertical mammoplasty places the nipple blood supply at risk in a large breast. The nipple remains on the original pedicle which is twice as long as it needs to be for the final breast size.

The article from Lejour enclosed for this report by the surgeon [see Appendix A]… quotes ischaemic complications at over 50% for women with **800g** of tissue removed.

[Ms A] had **2400g** removed on each side.

If the surgeon was convinced that, in his hands, a Lejour was the best operation then he should have warned the patient that there was a greater

than 50% chance of partial tissue death after surgery in her body type. This may have influenced her decision to proceed.

Almost all the poor outcome in this case has been caused by poor blood supply. The infection is almost certainly a secondary phenomenon. This blood supply started off poor due to patient factors and was made worse by the choice of operation.

The quality of surgical technique during the operation cannot be commented on from the information provided. However the technical challenge in this case is at the extreme end of the scale even for an expert.

5. Was [Dr B's] postoperative management of [Ms A] appropriate? In particular, please comment on:

a. [Dr B's] debridement of [Ms A's] breasts
b. The actions he took regarding the wound infection
c. Whether [Dr B] should have readmitted [Ms A] or referred her for further assessment and treatment. If not, when?

The postoperative management was misdirected due to a misdiagnosis. The problem was ischaemia (lack of blood supply). This meant that the problem below the skin could be a lot worse than the outside showed. It also meant that minor debridement and letting out 'pus' was not enough to solve the problem. The infection was almost certainly secondary to bilateral poor blood supply.

The surgeon showed dedication to [Ms A] and was attentive. He did not diagnose or recognise the problem correctly therefore could not and did not communicate the severity of the situation.

The surgeon upset the patient on occasions during the postoperative phase. There are many comments about chaperoning, discomfort and sterility of instruments. These comments come from a breakdown in the surgeon–patient relationship due to the complications.

He was under extreme pressure due to a devastating adverse outcome, which he was trying to remedy. He was in a difficult position because his own preoperative expectations matched those of the patient and were unrealistic. The surgeon would have found this complication easier to manage in a peer group so that a colleague could have looked more objectively at all factors.

Admission to hospital eventually occurred however it is not clear that earlier admission would have changed the final outcome.

> There is no evidence to this expert that poor postoperative management made the situation worse. The adverse outcome was highly likely from the choice and the execution of the operation.

If, in answering any of the above questions, you believe that [Dr B] did not provide an appropriate standard of care, please indicate the severity of his departure from that standard.

In my opinion [Dr B] acted in a dedicated manner towards his patient. He provided information to the best of his ability and was attentive and available preoperatively and postoperatively. The breakdown in surgeon/patient relationship was largely due to the complications rather than to unprofessional attitudes.

Many of the lesser complaints about the surgeon behaviour in this case should be recognised as those that occur under extreme stress when facing an adverse outcome in a patient.

However, the choice of operation was inappropriate for this woman. This may have occurred due to inexperience in this technique, or to lack of a peer group, or both.

His failure to realise the underlying problem of ischaemia postoperatively was either a sign of inexperience or wishful thinking.

A group of surgeons experienced in breast reduction would severely disapprove of the operative choice and possibly the technical performance in this case. …"

Plastic surgeon advice

The following expert advice was obtained from consultant plastic surgeon Dr Sally Langley:

"I do not consider that [Dr B] provided [Ms A] with an appropriate standard of care. His fault is threefold: inadequate pre-operative counselling; incorrect procedure performed; and poor management of [Ms A's] post-operative problems.

Pre-operatively [Ms A] sounds as though she received some information about breast reduction but not enough about the possible complications and her risk factors. The documents on pages 091–096 give appropriate information. The Le Jour article 084–090 is quite explicit. It does mention liposuction. This may be why [Ms A] thought she had had liposuction. [Dr B] sounds as though he understated the possibility of post-operative complications. [Ms A] had two significant risk factors for complications, namely, obesity and smoking. The possibility of complications such as wound breakdown, skin and fat necrosis, and infection, should have been emphasized to [Ms A]. In [Dr B's] letter to [ACC Medical Misadventure Unit] on 31st May 2005, he says: 'I checked her, told her what the operation entailed, how it was done and what the results can be and what the complications are if any, that one can expect.' This implies that [Dr B] has glossed

over the risks of this operation. Complications of breast reduction using any techniques are well known and are not rare. This is non-essential surgery. The patient is choosing to undergo breast reduction subject to the information she is given.

[Dr B] went on to do the breast reduction using a technique which was unlikely to go well. The Le Jour vertical mammoplasty is a difficult breast reduction technique. Most, but not all, plastic and reconstructive surgeons would limit this technique to smaller reductions or mastopexies (breast re-shaping) in women of normal weight or only mildly overweight. The article by David Hidalgo (1.) suggests using the technique for reductions less than 800g each side. I think it is unlikely that any of my colleagues would have used this technique for this indication. [Ms A] was significantly overweight at 102kg and had a very long sternal notch to nipple distance of 49cm. This means that the nipple-areolar complex and related breast parenchyma is a long way from the chest wall from where the blood supply comes. The consequence of this is a high likelihood of poor blood supply to the nipple-areolar complex and adjacent parenchyma (breast glandular and fatty tissue). This causes necrosis of skin and fat and consequently infection. It is not clear what weight of breast tissue was removed from each side. It is difficult to interpret the histology reports …. 2300g may have been for each side or both. [Ms A's] photographs look as though about 2000g has been removed from each side.

It is unlikely that infection with a particular organism is the primary reason for the problems. It is more likely that tissue necrosis has occurred due to poor blood supply and then infection has entered. Also [Ms A] may have had a large amount of drainage from both of her breasts filling one bottle (according to [Ms A]) at about 24 hours when drains were removed. [Dr B's] letter states 100ml … There is no hospital record that I can find of the amount of drainage. Many of us do not drain breast reductions. When I drain a breast reduction there would usually be about 50ml each side. A bottle contains about 500–1000ml. Large drainage suggests a problem such as ongoing bleeding, haematoma, or increased serous ooze due to ischaemia. A large volume of drainage is also a risk factor for problems. If a haematoma had developed soon after surgery there would have been increased drainage. A haematoma usually needs surgical drainage. If there was a large volume of drainage as suggested by [Ms A], the drains should have been left in and should have been attached to separate bottles.

[Dr B] has emphasized the role of streptococcal infection and that it would not have arisen in his hospital. … This shows a lack of understanding of the pathological process of tissue necrosis which was occurring. Antibiotics would help to treat infection in nearby vascularised tissue. Necrotic (dead) tissue needs to be removed by 'debridement'. [Dr B] was attentive to [Ms A's] needs for wound care and saw her most days when she had problems. He debrided dead tissue. Dead tissue should be insensate (have no sensation) and should not hurt as it is removed. However it is always adjacent to sensate viable tissue and movement and touching

more normal tissues causes pain. Also there would have been other sensations such as odour. [Ms A] was upset when she saw and felt some of the tissue removed. [Dr B] should have realized after several days, and no more, that his style of wound debridement was futile and that [Ms A] should undergo surgical debridement in hospital to expedite recovery.

[Dr B] performed the wound dressings with debridement on his own. It sounds as though a secretary was nearby. I consider that the extent of [Ms A's] problems require that [Dr B] should have had the assistance of a nurse both to aid him and [Ms A]. Also he should have arranged further surgical debridement either under his care privately or at the public hospital. It is fortunate that [Ms A] did not get more unwell than she did.

[Ms A] complains that [Dr B] did not use sterile dressing technique. This may need to be clarified. [Dr B] explains the sterile instruments and dressings he uses.

The use of antibiotics before surgery and after are minor issues. Though many surgeons would do this operation with no antibiotic cover, most would give an intravenous dose at the commencement of surgery to cover staphylococcus and streptococcus species. [Dr B] has used a longer course of antibiotics before surgery and after. The technique used and poor blood supply to the tissues are the important features here. Antibiotics have their place to treat cellulitis, purulent infection, and systemic infection. Debridement, which may need to be surgical, is more important in controlling infection in the presence of necrotic tissue.

At the preoperative consultation the issue of [Ms A's] weight should have been raised. [Ms A] should have at least been made aware that further weight reduction was desirable before undergoing breast reduction. This advice is both to hope for a better result and for less complication.

It is ideal, but not essential, that a chaperone be present for breast examinations. It would have helped [Ms A] to have had a nurse present for multiple reasons including as a chaperone.

The swab count was incorrect at the end of the operation. [Dr B] should have checked the wounds or arranged an X-ray at the end of the operation. I understand that the X-ray was done the next day. This should have generated a hospital 'incident report'. That may have been done.

[Ms A] should have been clearly informed about the technique to be used. She should have been offered the technique with a lower risk of complications. The Le Jour vertical mammoplasty had a certainty of causing her problems. She should have been offered either 'amputation and free nipple graft technique' (my preference), or a standard pedicled technique. The standard pedicled techniques are the 'inferior pedicle technique', the 'superomedial pedicle technique', and 'medial pedicle' techniques all using a traditional 'Wise' pattern skin incision and closure.

The literature supports the use of the medial (2.) or superomedial pedicle for large reductions in very ptotic breasts. However the technique used should be checked according to the distance of the nipple from the chest wall from superiorly or inferiorly. The safest technique for very large, very ptotic breasts, is amputation and free nipple graft.

[Ms A] is concerned about her inability to breast feed and altered nipple sensation. Though this has occurred related to complications, [Ms A] should have been told that with a very large reduction (and certainly with amputation and free nipple graft) she would not have been able to breast feed and would have had less or no nipple sensation. All breast reductions carry some risk of inability to breast feed and decreased or lost nipple sensation. It is important to discuss this.

Summary

[Dr B] has failed to provide [Ms A] with an appropriate standard of care. Pre-operative examination and assessment is deemed satisfactory. The breast reduction information given to [Ms A] is adequate (if she was given it). [Dr B] failed to emphasise [Ms A's] increased risk of complications due to obesity and smoking. [Dr B] did not explain the ideal and safest breast reduction operation that could be done. He only advised the Le Jour vertical mammoplasty.

[Dr B] has significantly deviated from acceptable practice by performing a Le Jour vertical mammoplasty on [Ms A]. This was destined to have a poor outcome and the subsequent complications could have been predicted. If a plastic surgical or general surgical registrar sitting part 2 surgery exams (FRACS) suggested the Le Jour vertical mammoplasty for a patient like [Ms A], the candidate would fail that section and possibly the whole examination due to being considered unsafe.

[Dr B] initially cared for [Ms A] appropriately during the first few days after surgery but should have taken a different tack once tissue necrosis and infection were established and especially with [Ms A] being so uncomfortable and unhappy suffering the complications. There can be a problem for a surgeon caring for a patient with surgical problems in sole private practice, but surgical care at his private hospital or referral to the public hospital would have helped [Ms A].

[Dr B] has significantly failed to provide [Ms A] with appropriate surgery and care.

Bibliography

1. Hidalgo, David A. M.D. *Vertical Mammaplasty* Plastic and Reconstructive Surgery: Volume 115(4) 1 April 2005 pp 1179–1197.

2. Nahabedian, Maurice Y. M.D.; McGibbon, Bernard M. M.D.; Manson, Paul N. M.D. *Medial Pedicle Reduction Mammaplasty for Severe Mammary*

Hypertrophy Plastic & Reconstructive Surgery: Volume 105(3) March 2000 pp 896–904."

Responses to provisional opinion

Dr B

Dr B stated that the Lejour article had been misquoted in the provisional opinion in relation to the excess weight factor and amount of breast tissue removed. He stated: "The article does not say 'ischaemic complications', it says 'delayed wound healing' … Delayed healing means slow healing, but does not mean ischaemic complications. I tell my patients that wounds may take 3−6 weeks to totally heal and even longer if there are any complications."

Dr B also stated that "[e]very operation, however small can have complications. This infection and its progress was managed by me in consultation from other practitioners."

Dr B's barrister also responded to the provisional opinion on behalf of Dr B. Dr B's barrister stated that in her view it was not appropriate for the Commissioner to obtain and consider advice from Dr Langley or Dr de Chalain, as they are plastic surgeons, whereas Dr B is a general surgeon. Dr B's barrister also stated that Dr Langley has assumed that Ms A was not clearly informed about the technique that was about to be used, and that:

> "[n]o mention is made of the fact that [Ms A] appears to have advised the Health and Disability Commissioner's office that she did not wish to have information of this nature, or of [Dr B's] response as to the information he gives."

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are applicable to this complaint:

RIGHT 4
Right to Services of an Appropriate Standard

(1) Every consumer has the right to have services provided with reasonable care and skill.

(2) Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards.

…

(4) Every consumer has the right to have services provided in a manner that minimises the potential harm to, and optimises the quality of life of, that consumer.

RIGHT 6
Right to be Fully Informed

(1) Every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including —
…

b) An explanation of the options available, including an assessment of the expected risks, side effects, benefits, and costs of each option;

Other relevant standards

The Medical Council of New Zealand's publication *Good medical practice, A guide for doctors* (2004) states:

"1. Patients are entitled to good standards of medical care. The domains of competence that follow are medical care, communication, collaboration, management, scholarship and professionalism.

Medical care

Good clinical care

2. Good clinical care must include:

- an adequate assessment of the patient's condition, based on the history and clinical signs and, an appropriate examination
- providing or arranging investigations or treatment when necessary
- taking suitable and prompt action when necessary
- referring the patient to another practitioner, when indicated.

3. In providing care you must:

- recognise and work within the limits of your competence: know when you do not know or cannot do capably
- be willing to consult colleagues."

Opinion: Breach — Dr B

Rights 4(1) and 4(2) of the Code of Health and Disability Services Consumers' Rights (the Code) state that every consumer has the right to have services provided with reasonable care and skill, and in compliance with professional standards. Right 4(4) states that every consumer has the right to services provided in a manner that minimises harm and optimises their quality of life. Under Right 6(1)(b) of the Code, every consumer has the right to the information that a reasonable consumer, in that person's circumstances, would expect to receive, including an explanation of the options available and associated risks and benefits.

The Medical Council of New Zealand states that good clinical care involves the medical practitioner performing an adequate assessment of the patient and recognising and working within the limits of his or her competence. Dr B did not provide Ms A with an appropriate standard of care, in that his preoperative counselling was inadequate, he performed an inappropriate surgical procedure to reduce Ms A's breast size, and he poorly managed her postoperative complications.

Preoperative assessment and breast reduction surgery
When assessing Ms A's suitability for breast reduction surgery it was necessary to take into account that she was obese with very large breasts. Her breasts had a very long sternal notch to nipple distance of 49cm, which meant that the nipple–areola complex was a long way from the chest wall and the blood supply. Ms A was also a smoker. At the first consultation, Dr B assured Ms A that her wish to reduce from breast size 20GG to size 20D was achievable, and recommended a Lejour vertical mammoplasty.

Ms A asked Dr B whether her smoking and high blood pressure would put her at risk from the surgery. She recalled Dr B advising that complications from this surgery are relatively rare. Dr B stated: "I have never told a patient the complications are rare." However, the private hospital's "Patient Information — Breast Reduction" information sheet, which was provided to Ms A, states: "Like any major surgery one can have problems with bleeding and infection but this is very rare."

Independent plastic surgeon Dr Sally Langley advised that complications of breast reduction surgery, using any technique, are well known and are not rare. Ms A had two significant risk factors for complications — obesity and smoking — and the possibilities of wound breakdown, skin and fat necrosis, and infection should have been emphasised to her. Dr Langley stated that Ms A should have been offered a technique with a lower risk of complication, such as amputation and free nipple graft or a standard pedicled technique, because the Lejour vertical mammoplasty is a difficult breast reduction technique and had "a certainty of causing her problems". Dr Langley advised that most plastic and reconstructive surgeons would limit this technique to smaller breast re-shaping in women of normal weight, or those who are mildly overweight. Ms A had already lost some weight in preparation for breast reduction surgery, but should have been advised that losing more weight would increase the chance of a better result and lessen complications.

Dr Langley quoted an article by Dr David Hidalgo, who recommended using the Lejour technique only for reductions of less than 800g each side, because of likely impairment to the blood supply of the nipple–areola complex when there is an overly long pedicle. The compromised blood supply (even further compromised in a smoker) can lead to necrosis of the skin and fat and consequently infection. This view was supported by Dr de Chalain in his advice to ACC.

Dr Langley noted Ms A's comment that the drainage bottle was full when removed. Dr Langley advised that a drainage bottle contains 500 to 1,000ml. She stated that if there was a large volume of drainage as Ms A recalls (there was no record of the drainage volume in the records) this suggests a problem such as ongoing bleeding, haematoma (clots) or increased serous ooze due to ischaemia.

Dr B stated that there is "no one universally satisfactory operation for every breast reduction", and even senior surgeons are not able to predict who will and who will not develop complications. He stated that partial amputation and nipple transfer are not free from complications, and he prefers the vertical Lejour technique, which has the advantage that it avoids the need to perform incisions below the breasts.

In Lejour vertical mammoplasty on a very large breast, the nipple remains on the original pedicle, which is twice as long as it needs to be for the final breast size, and thereby places the nipple blood supply at risk. The Lejour article Dr B provided quotes wound healing complications at over 50% for obese women who have more than 800g of breast tissue removed. Ms A had 2,400g of tissue removed from each

breast. Because of Ms A's physical characteristics, the blood supply to her nipples was poor, and was exacerbated by the choice of operation.

Independent general surgeon Dr Garth Poole advised that Ms A's height-to-weight ratio, and her smoking and borderline diabetes, meant that she needed the safest possible operation. The operation Dr B performed had a very high risk of complications. Either he should have offered Ms A a different operation, or the consent process should have indicated a greater than 50% chance of major tissue loss postoperatively. While Dr Poole stated that he is unable to comment on the quality of Dr B's surgical technique from the information provided, he advised that the technical challenge in this case was at the extreme end of the scale even for an expert. Many experienced breast reduction surgeons would have had a low expectation for success, and few would have chosen to perform the Lejour technique on Ms A. Dr Poole stated:

> "[T]he choice of operation was inappropriate for this woman. This may have occurred due to inexperience in this technique, or to lack of peer group, or both. … A group of surgeons experienced in breast reduction would severely disapprove of the operative choice."

Dr de Chalain advised ACC that the Lejour pattern of breast reduction was the "wrong choice" for Ms A. He stated that the chance of Ms A's nipple–areolar tissue surviving on a pedicle of 49cm is minimal. He said that the photographs of Ms A's breasts taken the day following the operation show that the nipple–areola tissue was "frankly ischaemic". He noted that "even Lejour herself would not undertake a reduction like this without significant modifications to her technique".

I am satisfied that Dr B's assessment that Ms A was a suitable candidate for a Lejour vertical mammoplasty was inappropriate and that he should not have performed this procedure on Ms A. Therefore, in my opinion, Dr B breached Rights 4(1) and 4(2) of the Code.

Preoperative information and counselling

Ms A read about breast reduction surgery before making initial enquiries with the private hospital. The hospital sent her an information pack about the surgery before her first consultation with Dr B. There is discrepancy about the information on breast reduction surgery provided to Ms A by Dr B. Dr B stated that he gave Ms A an article by Dr Lejour, which contains detailed information about vertical mammoplasty. Ms A denies having seen this material. Whatever the case, this article is written in medical language, and the style would not make the information contained readily understood by the lay reader. What is clear is that Dr B did not discuss other possible breast reduction procedures with Ms A (such as amputation and free nipple graft or a standard pedicled technique), which he should have done, particularly given the risks associated with the Lejour procedure for someone with Ms A's physical characteristics.

Ms A should have been clearly informed about the breast reduction technique Dr B intended to perform, and the complications that could occur with this type of surgery. While Ms A may have told Dr B that she did not need to know "the graphic details" of the surgical technique, such a statement does not lessen his obligation to inform her of options available and associated risks and benefits.

While Ms A was aware that complications could occur, she recalled being told by Dr B that these were relatively rare. Dr B denies telling Ms A that complications were rare, and states that he detailed the complications. However, the fact that Dr B failed to appreciate the inappropriateness of the procedure makes it unlikely that he provided Ms A with accurate information about the likelihood of complications (ie, that this was as high as 50%). This is information that someone in Ms A's circumstances would reasonably expect to receive, and that would almost certainly have influenced her decision whether or not to proceed. It is apparent that Ms A was optimistic about the results of the surgery, and Dr B had assured her that any adjustments or "touch-ups" that were needed after the surgery could be done under local anaesthetic.

I am satisfied that Dr B provided Ms A with some information about the type of surgery he intended to perform, and there was some discussion about the risk factors and possible complications. However, Dr B did not discuss surgical options with Ms A, other than the Lejour technique, or provide her with accurate information about the likelihood of complications associated with that procedure. Accordingly, in my opinion Dr B breached Right 6(1)(b), in failing to provide Ms A with adequate information about the options available to her, and the risks and benefits of each option.

Postoperative management

Ms A's breast wounds showed signs of infection six days post-surgery. Dr B saw Ms A daily for dressing changes, but her condition deteriorated.

Dr Poole advised that Dr B's postoperative management of Ms A, although dedicated and attentive, was misdirected owing to a misdiagnosis. Dr Poole said that Dr B was in a difficult position because his preoperative expectations were unrealistic. Ms A's breast wounds were not healing because of ischaemia. Dr Poole stated:

> "This meant that the problem below the skin could be a lot worse than the outside showed. It also meant that minor debridement and letting out 'pus' was not enough to solve the problem. The infection was almost certainly secondary to bilateral poor blood supply."

In Dr Poole's opinion, Dr B acted in a dedicated manner towards Ms A, provided information to the best of his ability, and was attentive and available preoperatively and postoperatively. Dr Poole suggested that the breakdown in the surgeon–patient relationship was largely due to the complications rather than unprofessional attitudes.

Dr Langley stated that it was unlikely that infection with a particular organism was the primary reason for Ms A's wound problems, and it was more likely that the tissue necrosis occurred because of poor blood supply, and then infection occurred. Dr Langley stated that Dr B's emphasis on the role of the streptococcal infection demonstrates a lack of understanding of the pathological process of the tissue necrosis that was occurring. Antibiotics would help to treat infection in nearby vascularised tissue, but the necrotic tissue needed to be removed by debridement. Dr B debrided the dead tissue, but should have realised within several days postoperatively that his style of debridement was futile, and that Ms A should undergo surgical debridement in hospital to expedite her recovery.

Dr Langley noted that Dr B performed the wound dressings and debridement on his own. The extent of Ms A's condition warranted the presence of a nurse, to assist both Dr B and Ms A.

Dr B was under extreme pressure to remedy the devastating adverse outcome. The complications would have been more easily managed in a peer group, so that colleagues could have made a more objective assessment of the issues. However, Dr B persevered with his treatment plan in isolation and did not communicate the severity of the situation to Ms A. Dr de Chalain advised ACC that Dr B should have taken Ms A back to the operating theatre for formal surgical debridement and washout within the first days of her presentation with infection, discharge and necrosis.

I am concerned that throughout the investigation Dr B has shown no appreciation of the inappropriateness of the procedure he chose, and its causal link to the adverse outcomes experienced by Ms A. Rather, he appears to remain of the view that infection caused the tissue breakdown. He suggested that Ms A carried the organism responsible for the infection, and seemed to have "no immunity".

The adverse outcome for Ms A was almost certainly determined by Dr B's inappropriate choice of operation.

The Medical Council's *Good Medical Practice, A Guide for Doctors* states that doctors must recognise the limits of their competence, and know what they cannot do capably. Dr B's response to the complications experienced by Ms A was determined by his assumption that the necrosis was caused by infection, and he failed to consider other options when Ms A's condition did not improve. Not only did Dr B fail to use reasonable care and skill in his postoperative care of Ms A, and to comply with the standards promulgated by the Medical Council, in my view, for the reasons outlined above, he also exacerbated the harm to Ms A. Accordingly, Dr B breached Rights 4(1), 4(2) and 4(4) of the Code.

Comment

Ms A expressed concern about some aspects of Dr B's practice, in particular the issue of the incorrect swab count in theatre, his apparent lack of aseptic technique, redressing the wounds, debriding without assistance, and supplying Valium tablets. Dr Poole commented that these issues could be attributed to the extreme stress Dr B was under when presented with a non-resolving adverse outcome.

There is discrepancy in the information about the gauze swab count after Ms A's surgery. Dr B recalled that the swab count was found to be incorrect after he had concluded the second breast reduction on 15 February 2005 (Ms A's operation was the first that day). However, it appears that he is mistaken in this because Ms A's operation records show that a swab was missed at 1.10pm at the conclusion of her operation. Dr B appeared to dismiss this matter when he stated that no swab was found in Ms A's wound, and further, that he does not use the swab described "anywhere near" the wound when performing breast reductions. Dr Langley advised that Dr B should have checked the wounds and, although an X-ray was performed at a later date, it should have been arranged at the end of the operation. She also commented that there was no evidence that an incident report was completed, so that further investigation into the matter could be conducted.

Ms A and her aunt expressed their concern that a nurse was not present when Dr B debrided and redressed Ms A's wounds. Ms A was so upset by the protracted and often painful procedures that her aunt resumed her support of Ms A at the consultations and (it is alleged) Dr B advised her to take a sedative beforehand. Dr Langley advised that it is ideal for a chaperone to be present for breast examinations, and it would have comforted Ms A to have had a nurse present when she was undergoing the redressing and debridement.

There is also discrepancy in the information provided regarding the provision of sterile dressings. Dr B stated that the private hospital provides sterile instruments and sterile combine dressings and does not "skimp" on dressings. When he uses instruments he washes them before putting them aside for nursing staff to process for sterilisation. Dr B denied that he replaced soiled dressings back onto Ms A's wound, but said that he reinforced his own dressings with sheets of clean gamgee. I am of the view that it is unlikely that Dr B replaced the soiled dressings on the wound as Ms A alleges.

Ms A also stated that Dr B gave her a "handful" of Valium tablets in an envelope. Dr B denied doing so and stated that he has no stocks of this medication at the private hospital, and has not prescribed Valium for 20 years. I am unable to form an opinion on these matters. In my view, as a result of the deteriorating relationship between Ms A and Dr B, Ms A possibly became overly sensitive to any departure, on the part of Dr B, from her expectations of acceptable practice, and this might account for the difference in their recall of these matters. As Dr E noted on 9 March 2005, "Sadly she has lost confidence in further treatment at [the private hospital]."

Although some of Ms A's concerns are not supported by the information gathered, I am satisfied that there is cause for concern about how the missing swab incident was managed. I accept Dr B's statement that he does not use these swabs near the surgical site. However, the theatre nurses reported to him their concern about the incorrect count. Dr B stated that the private hospital policy regarding an incorrect swab count was followed, but he did not provide a copy of that policy to support his case. Irrespective of the policy that may have been in place, in my view a chest X-ray taken nine days later does not comply with best practice. I advise Dr B to reflect on this aspect of his practice.

Expert advice

Dr B's barrister raised concerns about the appropriateness of considering advice from Dr Langley and Dr de Chalain on the basis that they are plastic surgeons and therefore not peers of Dr B. I agree that fairness requires that Dr B's services are considered with reference to the standards accepted by his peers. In this case, the breast reduction procedure performed is one that I am advised is usually undertaken only by experienced plastic and reconstructive surgeons. While a doctor with a general surgery scope of practice may be able to perform such a procedure, the degree of skill and care expected when doing so is the same as if the procedure were performed by a doctor with a plastic and reconstructive surgery scope of practice. The standard to be considered is that of a reasonable surgeon who performs this procedure. There has been no suggestion of any expectation that Dr B's services should be of a lower standard due to his general surgery scope of practice. Clearly, if there were such a suggestion it would have been information that a reasonable consumer in Ms A's position would expect to be provided with.

I sought advice from Dr Langley, as she was more likely to be familiar with the procedure in question. I also sought advice from Dr Poole, a general surgeon. I consider that it is entirely fair and appropriate to consider the advice from both of these advisors and the comments made by Dr de Chalain. I also note that the advice from all three advisors is very consistent and not at all indicative of differing standards between those with different scopes of practice.

Actions taken

On 18 July 2005, I recommended to the Medical Council that it review Dr B's competence. On 29 November 2005, the Council advised that it has "resolved that Dr B will be required to undergo a performance assessment". On 17 February, the Medical Council advised that the assessment will take place in June 2006.

Recommendations

I recommend that Dr B apologise to Ms A for his breaches of the Code. A written apology should be sent to the Commissioner for forwarding to Ms A.

Follow-up actions

- Dr B will be referred to the Director of Proceedings in accordance with section 45(2)(f) of the Health and Disability Commissioner Act 1994 for the purpose of deciding whether any proceedings should be taken.

- A copy of my final report will be sent to the Medical Council of New Zealand.

- A copy of my final report, with details identifying the parties removed, will be sent to the Royal Australasian College of Surgeons, Women's Health Action, and the Federation of Women's Health Councils Aotearoa, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes on completion of the Director of Proceedings' processes.

Addendum

The Health Practitioners Disciplinary Tribunal found that in performing the Lejour vertical mammoplasty Dr B had performed an inappropriate procedure for Ms A, given her obesity and the size of her breasts, and that this amounted to professional misconduct, as did the lack of adequate preoperative information enabling her to consent to the procedure. In particular she was not told that because of her size and the fact that she was a smoker, there was a significant risk of major tissue loss preoperatively, that the Lejour was not a suitable technique for her and that there were others available, or that she might not be able to breastfeed postoperatively.

The surgeon's failure postoperatively to explain to his patient the cause of the necrosis and infection, the likelihood of nipple loss, the possibility that antibiotics might not be effective in treating the infection, and that re-operation under general anaesthetic might be required, when considered along with the other shortcomings, were found to amount to professional misconduct.

In imposing penalty, the Tribunal observed that the surgeon had "a lack of knowledge of essential procedures which he should have been aware of when undertaking breast reduction surgery". The Tribunal imposed extensive conditions, including that the surgeon practise under supervision for three years, not undertake any new procedures, not undertake or advertise any plastic, reconstructive or cosmetic surgery, and that he undertake education in communication, risk factors and postoperative complications. An urgent and full competence review by the Medical Council of New Zealand was recommended. He was fined $5000 and ordered to pay costs of $15,000. The Tribunal declined permanent name suppression. The surgeon's appeal to the High Court in relation to name suppression was unsuccessful.

Ms A has had further reconstructive surgery several times, which has been successful.

Appendix A

Vertical Mammaplasty for Breast Hypertrophy and Ptosis – by *Madeleine Lejour,* Brussels

Vertical mammaplasty is a technique that uses adjustable markings, an upper pedicle for the areola, and a central breast reduction with lower skin undermining. The shape of the breast is created by suturing the gland and does not rely on the skin. No scar is produced in the submammary fold. Liposuction is added whenever feasible (in 55 % of the cases).

This technique, which can be applied to small and large breasts, benefits from three innovative principles:

- Wide lower skin undermining to promote skin retraction and reduce the amount of scarring
- Overcorrection of the deformities to produce better late results
- Liposuction to facilitate molding of the breast and remove unnecessary tissue, prone to absorb when the patient loses weight

A personal series of 220 cases has been analyzed. Results have been very gratifying, not only with regard to the reduced scarring, but also because of the durable, beautiful shape obtained. Complications have been uncommon, and only one case required a revision under general anesthesia.

The main drawback of this technique is that the result is not obtained immediately, but this is more a problem for the surgeon who is starting to use the technique than for the patients.

Principles

The main goals of a breast reduction are, listed in decreasing importance, reduction of volume, good shape and symmetry, minimal scarring, maintenance of nipple sensitivity, and the possibility of lactation.

Reduction of volume has been obtained safely by a number of current techniques. *Shape*, however, remains a concern, as late results often show breasts that are too broad, too flat, and too low. This means that, aside from volume reduction, the other deformities of large breasts have not been adequately corrected or have recurred. Moreover, the breasts display scars that may stretch and hypertrophy and sometimes move away from the submammary fold where they were first hidden. The main reason for these unpleasant results is the position of the breast, which is an organ devoid of muscular support, covered by stretchable skin, projecting outside the body, and subject to forces of gravity. Volume variations with the menstrual cycle and pregnancies aggravate the problem.

If we understand that the result of surgery will progressively deteriorate, it becomes clear that the deformities must be overcorrected by the surgery. A perfect result should thus not be achieved on the operating table, in contradiction to traditional plastic surgical principles. This requires mental effort and some courage on the part of the surgeon, but the result is rewarding. The high, projected, and narrow breasts come down in a few weeks to the right position and shape. Stability of the result obtained this way is much improved, at least as far as we can influence it. Also, it depends on the breast content, a subject that is only just beginning to raise some interest among surgeons.

Scars left by breast reduction and mastopexy are always bothersome. The smallest scars are the best, as long as they are not reduced at the expense of quality or breast shape. Periareolar techniques, producing the least scarring, have unfortunately deceived most surgeons because they tend to create flat breasts, recurrent ptosis, and stretched, irregular scars. A vertical extension from the periareolar scar to the submammary fold should be accepted to obtain the expected result. By chance, this vertical scar is also the one that fades best with time. Eliminating the horizontal submammary scar has been a major development in breast reduction techniques. Nevertheless, once again this improvement should not be obtained by lengthening the vertical scar beyond the submammary fold, as this would be unacceptable to the patients. This is why I have progressively developed the idea of detaching the skin on the lower part of the breast and "gathering" it in temporary fine wrinkles along the vertical scar to reduce its length. These wrinkles disappear through skin retraction after a few weeks to a few months, depending on the size of the breast and the laxity of the skin. Skin retraction will, however, not be possible if the skin is submitted to inner pressure. A strong glandular suture will prevent this, and an elastic brassiere worn day and night for 2 months postoperatively will help keep the new shape of the breast.

Vertical mammaplasty, as described above, is a technique which combines two innovative principles: overcorrection of the deformities and skin retraction ability.

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Nipple sensitivity is due to perforating lateral and medial branches of the first to fifth intercostal nerves. Contrary to common belief, it is not better preserved in inferior than in superior pedicle techniques, especially when the base of the upper pedicle is large, as in vertical mammaplasty. Reviewing 170 personal cases from this series evaluated at least 6 months after surgery, I found absent sensitivity in one case only, and a reduced sensitivity in seven cases (one unilateral, seven bilateral).

Lactation after reduction mammaplasty has not been evaluated on a large scale and would not be easy to perform. In most developed countries – where breast reductions are performed – the natality rate is low, and many women do not want to breast-feed for fear of subsequent breast ptosis. I encourage my young patients to breast-feed and know some of them [illegible]t successfully. It is certainly not the amount of breast tissue that matters for breast feeding; we all know of some women with very small breasts who are able to produce large amounts of milk.

After having used a number of other methods during the past 30 years – including the Stömbeck, McKissock, Weiner, and short submammary scar techniques – for the reasons explained above, I now use exclusively the vertical mammaplasty because it has proved to be a safe technique producing stable results and minimal scarring. The principles of this technique were first published by Dartigues for mastopexy, then developed by Lassus for mastopexy and reduction. The modifications I introduced (lower skin elevation and wrinkling of the vertical scar) allow the application of the technique t[illegible]rge breasts without the drawback of lower tissue excess and long vertical scars.

This technique has been applied in the Department of Plastic Surgery of the University of Brussels and in my practice since 1989 in about 1000 patients. It is also widely used in many other places in Belgium and abroad. As for all techniques, there is a learning curve, and surgeons with a better sense of three-dimensional surgery and aesthetics will obtain better results. One of the advantages of this technique is its applicability to all cases. I have, however, limited experience with extremely large breasts, with over 40 cm from the sternal notch to the nipple, as these are uncommon in my country. In such cases, the same technique combined with a horizontal lower skin excision would probably avoid long months of skin wrinkling and possible maceration.

Liposuction of the Breast

Aspirating fat from the breast is an application of liposuction that is slowly gaining popularity. Surgeons' reluctance to use this technique here, although it is so widely applied in other parts of the body, has several reasons.

The fatty component of breast tissue has not been a subject of evaluation until recently, and most surgeons erroneously believe that large young breasts are mostly glandular. In a recent study of the fat contained in breast tissue removed by mammaplasty, I found extremely variable amounts (from 2 % to 78 %), with a mean of 50 %. This amount is not age dependent before the age of 50 and increases with the body mass and with the total volume of the breast. In a previous study on breast liposuction, I found that 50 % of women in their twenties can benefit from liposuction and that the amount of fat that can be extracted by this method represents 20 % of the breast tissue removed to obtain the desired breast volume. Interestingly, the amount of fat extracted by liposuction does not parallel the total fat content of the breast because fat and gland are mixed in variable patterns. Some breasts with small fat lobules surrounded by parenchyma are poor candidates for liposuction. It is interesting that clinical examination and even mammography do not indicate clearly if the breasts are fatty and if liposuction is possible. The best way is to try it at the beginning of the operation and to remove more tissue surgically when liposuction does not work.

Many surgeons have objected to liposuction of the breast because liposuction might induce calcifications that could be confused with cancer calcifications. This concern has been allayed by a recent study at the University Hospital in Brussels. Microcalcifications are infrequent. Few are situated deep in the parenchyma, and they are rounder and more scattered than cancer calcifications.

Another source of opposition stems from the fear of extracting cancer cells from breast tissue without detecting them or knowing where they came from. In fact, liposuction performed with a blunt cannula does not aspirate parenchyma. This was demonstrated by histologic examination of a large number of aspirate samples.

The advantages of suctioning fat from the breast are as follows:

1. After liposuction, the breast is softer, more pliable, and easier to shape. This altered consistency is especially helpful when the areola is elevated on a long pedicle.

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2. With the suctioning of fat before surgical resection, more vessels, nerves, parenchyma, and connective tissue are conserved once the final breast volume is obtained. Keeping these structures intact means a better blood supply, greater retention of sensitivity, an increased chance of lactation, and, possibly, a more stable result.
3. During modeling and suturing of the breast, local volume excesses can be removed by liposuction, decreasing tension on the sutures, and sculpting the new breast form. Any asymmetry between the two breasts can be corrected by suction at the end of the operation, without having to undo the sutures, which saves time.
4. Since more fat is removed than other tissues, the resulting breast is less prone to recurrent ptosis if the patient loses weight after the operation. This is an important advantage when treating overweight adolescents with large breasts who often lack the motivation to diet until their breasts are reduced.

Of course, liposuction of the breast can be combined with any breast reduction technique and is by no means necessary to perform vertical mammaplasty. I have simply found the combination of the two procedures to be effective in the reduction of large fatty breasts.

Methods

Breast Reduction (see pages 78–82)

Liposuction is attempted at the beginning of the reduction of all large breasts. Because deepithelialization around the areola is easier when the breast is still firm, this part of the procedure is performed first. The sequence is thus as follows: (1) markings, (2) infiltration, (3) deepithelialization, (4) liposuction, and (5) surgical excision and remodeling.

Markings (Fig. 4.**16a–g**) are done freehand with the patient in an upright position and are adjusted to suit the individual's habitus and desired postoperative result. The midline and the submammary fold are marked, and then the vertical axis of the breast is drawn from the submammary fold downward. This vertical axis marking is usually 10–12 cm from the midline. It serves as a reference for determining the lateral vertical margins of skin resection, which are marked while the breast is pushed medially and then laterally, and the two lines are drawn on the breast in continuity with the lower axis of the breast. Pushing the breast upward while making these markings is important to create a conical rather than a flat breast. The two vertical lines are then joined by a curved line above the submammary fold and another curved line around the future site of the nipple, which is chosen according to the preferred method of the surgeon. The upper part of the periareolar marking is located 2 cm above the future nipple site. From this point, a curved line is drawn downward on each side and joins the vertical lines perpendicularly at a variable level. The points where this marking touches the vertical lines vary according to the size of the breast in order to limit the length of the marking to 16 cm at the most. In large breasts, the vertical lines are more distant from each other, and the periareolar marking joins them at a higher level. In small breasts, a periareolar marking of 14 cm will join the vertical lines lower, giving the aspect of a mosque dome rather than a mushroom to the upper area of deepithelialization. When the incisions are closed after the gland is remodeled, these curved incisions encircle the areola, and rarely is it necessary to modify them intraoperatively. This variably sized upper curved marking defines the area of deepithelialization, which is much greater in larger breasts. With this approach, a much safer upper pedicle to the areola is created in large breasts than with the classic markings of the Wise pattern. When complete, the markings indicate the area to be deepithelialized in the upper part of the breast and the skin to be excised in the lower part of the breast. The amount and location of glandular removal do not correspond to these markings.

Infiltration. The patient is anesthetized and placed in a semisitting position. The lower half of the breast is infiltrated with 20 mL of 0.5 % lidocaine (Xylocaine) with 1:1000000 epinephrine (40 mL in very large breasts). I have found that this combination has reduced the amount of bleeding, and no patient has had to be transfused.

Deepithelialization. The upper area of skin delineated by the marking is deepithelialized to a point 2–3 cm below the areola.

Liposuction. A small incision is made just above the lower marking of the skin incision, and a 6 mm-three-hole blunt cannula is inserted into the breast. When possible, fat is suctioned from all parts and levels of the breast, including the upper breast and the lateral and medial portions that will serve as pillars of the remodeled breast. The medial pillar always contains more fat than

the lateral pillar. Only behind the areola is suction not performed to avoid damaging the galactophoric ducts.

Liposuction is ceased when the volume of fat suctioned decreases. Of course, in extremely fatty breasts it should be ceased before the breast has lost too much volume and before the pillars have become too flaccid.

If the cannula does not penetrate the gland easily, it is withdrawn, and liposuction of the breast is abandoned. In these cases, subcutaneous suctioning may ease elevation of the lower skin in the next step of the procedure.

Operative procedure. The lateral margin markings are incised, and the skin outside the markings is dissected free from the underlying gland laterally, medially, and downward exactly to the submammary fold (Figs. 4.**17**, 4.**18**). No skin is undermined outside the periareolar marking: this will provide better conditions for skin healing around the areola. Medial and lateral dissections are done in an oblique fashion from the upper part of the vertical markings to the lower medial and lateral margins of the breast tissue. These dissections are performed as in subcutaneous mastectomy, leaving about 0.5 cm of fat under the skin. This superficial level of dissection will facilitate the draping and retraction of the excess skin after the operation. If dissection is done at a deeper level, the skin will not retract and will later bulge on the lower breast.

The lower central part of the breast is elevated from the chest wall at the level of the submammary fold (Fig. 4.**19**). Dissection proceeds upward to the upper margin of the gland, at the level of the third intercostal space, creating a central 6–8 cm vertical tunnel behind it. This central elevation of the parenchyma on the chest wall allows upper displacement of the breast and overcorrection of ptosis. Then, two lateral cuts are made from the lower part of the future areola down to the lower portion of the breast. This isolates the central portion that will be partly excised and limits the medial and lateral pillars of breast tissue that will be sutured together (Fig. 4.**20**). These incisions divide the lower half of the breast in three portions, one central and two lateral, and diverge laterally in the lower breast to include more tissue in the central part. In moderate reductions, excision is limited to the central breast below the areola. In large breasts, excision is extended behind the areola upward (Fig. 4.**21**). The areola pedicle may be thinned to about 2–3 cm, even in cases of major breast hypertrophy, in which the nipple must be elevated 10–12 cm.

A strong, slowly absorbable suture attaches the deep part of the gland, taken at level of the upper areola, to the pecto muscle at the highest level of dissec (Fig. 4.**22**). This upper central stitch elevates breast to an exaggeratedly high position, cr ing a temporary upper bulging and relieving sion on the lower half on the breast during h ing. The areola is then sutured into place.

Next, the two lateral pillars of breast tis which have been left attached to the pecto major muscle and partly to the overlying s are sutured together with three or four str sutures that start below the areola with a rat superficial bite on their anterior surface and t proceed downward with deeper sutures enter the gland near the limit of skin eleva (Fig. 4.**23**). This suturing of the gland shapes breast, creates its conical appearance, and p gressively reduces the size of its base. These tures should not fix the gland to the chest because the gland should be free to descend a surgery.

Once the breast is reshaped, the skin ha around it, and it is clear that, contrary to the c cepts underlying most modern reduction te niques, the skin has no influence on shaping breast. The skin will contract postoperatively fit the new glandular size and location. E when it seems that the excessive amount of s cannot be managed by a vertical suture, it increasingly been my experience that it can. area of skin that has been undermined below lower curved marking will retract and adjust the submammary fold.

Suturing is done in two planes. A subcuta ous running 3–0 slowly absorbable stitch vates the skin on the gland (Fig. 4.**24**), start from the lower central part of the skin, which been marked at the beginning of the operati and attaching it to the lower midportion of gland. This ensures that the vertical scar will extend beyond the submammary fold after he ing. From this point, the running subcutane suture wrinkles the skin on the whole verti suture and already reduces its length consic ably. On the subcuticular plane, very fine bites a 4–0 nylon running suture gather the skin ev more (Fig. 4.**25**). With this method of closu the excess skin is draped all along the verti suture, reducing its length to 6–7 cm in m cases. If the vertical suture is left too long a crosses the submammary fold, it may still appe below the brassiere after a few months once gland has settled into its final position and sha An excessively long vertical suture line shou and can be avoided in nearly all cases.

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At the end of the operation, the breasts should be bulging in the upper part and flat below the areola. If this is not the case, the late result will be unsatisfactory, showing an excess of tissue in the lower breast, a lack of tissue in the upper breast, and an upward-pointing areola.

Drains are placed in the wounds and will be pulled out of the dressing before the patient is discharged the next day. The lower breast is molded with Micropore on a few compresses, forming a tight dressing and supporting the breast upward. A sports brassiere should be worn day and night for the next 2 months postoperatively.

Postoperative course. After 1 week, the first dressing is removed. Breast appearance is already improved. The vertical sutures still appear wrinkled, but the breasts have begun to descend and no longer appear excessively lifted. A new dressing with Micropore is placed under the elastic brassiere. The sutures are removed after 2 weeks, and the patient continues to wear a strong elastic brasserie and does not resume sport activities before the 3rd postoperative month.

Mastopexy (see pages 77–82)

Mastopexy is an easier procedure than reduction and usually involves no healing complications. The problem here is to obtain an attractive and durable shape, as ptosis has a tendency to recur. Elevation of the breast for overcorrection of ptosis and strong suturing of the gland – even in two vertical rows if the gland is not firm – is mandatory. In all cases except very minor ones, laxity is sufficient to allow folding the lower breast without cutting through tissue.

After elevating the lower skin dissecting the central portion of the breast on the muscle fascia, the upper stitch is placed as it usually is to uplift the breast. The lower border of the gland is then attached by one central stitch to the upper suture, elevating the lower breast, and creating two lateral folds of breast tissue which will form pillars and will be sutured together (Figs. 4.**30**–4.**34**).

If it is necessary to increase the volume, the mastopexy can be combined with an augmentation. In that case, a retropectoral pocket is dissected before skin suturing, and the implant is placed as in any augmentation procedure. It is important to understand that in such a case the dressing should not push the breast upward, but downward, to avoid upper displacement of the implant.

Results

From 220 patients operated on consecutively in my private practice, there were 417 mammaplasties: 286 breast reductions in 148 patients, and 131 mastopexies in 72 patients. Among the 286 breast reductions, liposuction was possible in 159 (55 %). The mean amount of liposuction was 300 mL per breast (100–1000 mL), and the mean amount of tissue excision was 500 g (120–1600 g).

Not including postmenopausal patients, about 50 % of the patients, even those who were in their twenties, could undergo the combined procedure of liposuction and surgical reduction. With postmenopausal women, this percentage increased sharply to 100 %. The amount of fat extracted, although very variable among patients of the same age, increased steadily with the age of the patients – from 20 % of the total amount in young patients to 100 % in postmenopausal patients. It is commonly accepted that postmenopausal patients have fatty breasts. Nevertheless, the facts that 50 % of the 20-year-old women with large breasts can successfully undergo liposuction and that the aspirate removed by liposuction in these cases accounts for a mean of 20 % of the total volume removed are surprising.

Complications (Table 4.1)

The total number of complications has remained low, compared to other data from the literature.

The most frequent immediate complication was *seroma* (4.5 %), which appeared as a local fluctuating swelling under the breast at the first dressing, 1 week after the operation. Seroma are probably due to the wide skin undermining. It seems that their number decreased when the skin undermining was done with the scalpel rather than with the cautery. The treatment of seroma is simple, as they require only one or two aspirations at 1 week intervals.

Surprisingly, the six *hematoma* (1.4 %) all developed after mastopexy. I have no explanation for this.

One single case of infection from 417 mammaplasties (0.2 %) is probably the lowest number reported. As infection mainly arises in necrotic tissue, it probably indicates that vertical mammaplasty does not devascularize breast tissue as much as other techniques.

Partial areola necrosis, the most frightening complication of breast reduction, has fortunately been observed in two patients only (0.4 %), both with very large and ptotic breasts. One of them

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Table 4.1 Complications after 417 mammaplasties (220 patients)

	With liposuction (161 breasts)	Without liposuction 256 breasts)	Total	%
Seroma	12	7	19	4.5
Hematoma	0	6	6	1.4
Infection	0	1	1	0.2
Partial areola necrosis	1	1	2	0.4
Delayed healing				
Skin	9	2	11	2.6
Skin and gland	7	2	9	2.1

required a later revision under general anesthesia to obtain a satisfactory result. This is the only case of secondary correction under general anesthesia in this series (0.2 %).

Wound dehiscences, with fat necrosis (2.1 %) or without fat necrosis (2.6 %), took several weeks to heal and bothered patients and surgeon. They were more frequent in cases with liposuction, which are also the cases with the fattiest breasts. Fortunately, all healed without needing further correction, but they sometimes left widened scars.

The negative influence of fat on wound healing is demonstrated by the following data. Healing was delayed in 16 of 220 patients (7.2 %) with 20 of 417 breasts (4.8 %). The 16 patients with delayed healing all belonged to the group of patients with breast reduction (16 of 148 patients, 10.6 %), as none of the 70 patients with mastopexy showed such complications.

Excess weight plays a role in wound healing as well as the size of the breasts. Fourteen of the 16 patients with delayed healing (87 %) were overweight, and 8 of them (50 %) were obese, whereas 8 of the 20 breasts with complications (40 %) had 500 to 800 g removed, and 10 of the 20 (50 %) had more than 800 g removed. In this series, excess body weight and breast size have about the same influence on delayed healing, which was observed in 17 % of overweight patients, 24 % of obese patients, 10 % of breasts with 500 to 800 g removed, and 23 % of breasts with more than 800 g removed. When obese patients had more than 800 g removed, delayed healing occurred in 56 % of the cases. Such a high percentage was not expected before this evaluation was done.

Two conclusions can be drawn from these data:

- Fat is the major source of complications in breast reduction, obesity being as significant as breast size.
- Breast size and body mass should be considered when comparing the complication rates of series reported in the literature.

Final Results

Final results have been very satisfactory (Fig. 4.**26**–4.**29**). Depending on the magnitude of the reduction, the final result in terms of shape may be expected by 2–8 weeks postoperatively. By 1 week to 3 months postoperatively (rarely more in very large breasts), the wrinkles of the vertical scar have faded. With this technique, excessively long scars should no longer be a problem. In heavy and ptotic breasts, however, some skin redundancy in the lower breast may persist and may require a minor correction after 6 months. This revision is not considered a complication, but rather a second-stage procedure. With the patient under local anesthesia, the excess skin is excised horizontally in the submammary fold. After skin retraction, this excision usually does not exceed a few centimeters. Also, at this point, the scar can be located easily in the submammary fold without risk of its future displacement on the lower breast, which often occurs with other submammary scar techniques. I have performed this secondary correction in 12 % of the cases, most of them operated on in the early years before I spread the wrinkles on the whole vertical suture. Considering the safety of the method and the beautiful, stable shape obtained as well as the reduced scarring, I now deliberately choose to perform vertical mammaplasty in all patients, even if this secondary procedure might be indicated on rare occasions.

Postoperative stability of the result has been one of the major advantages of using this method, which relies on glandular shaping and suturing and not on skin tension to maintain breast form. It is not easy to precisely evaluate the influence of liposuction on the stability of the breast shape when the patient loses weight postoperatively. No obvious reduction of breast volume was observed in the patients who lost weight after breast reduction and liposuction, and no ptosis subsequently developed. The result probably would have been different had liposuction not been performed, since breast ptosis is

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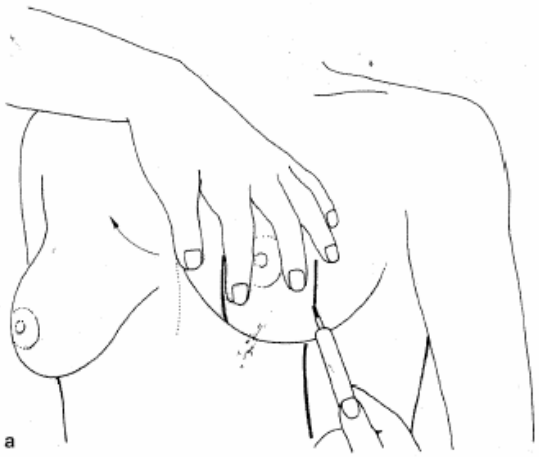

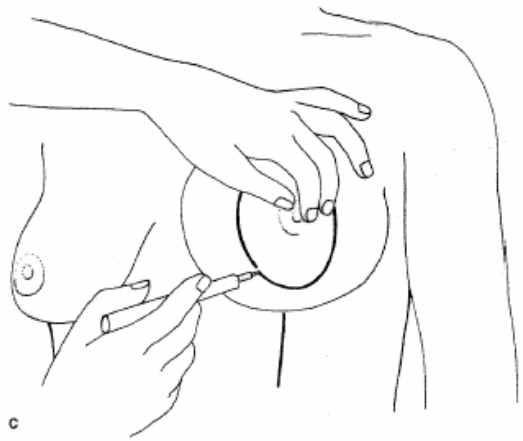

Fig. 4.**16a–g** Markings
a, b The vertical lines are placed in continuity with the vertical lower axis of the breast, after pushing the breast laterally and upward on each side
c Curved lower marking above the submammary fold

often observed after weight loss in patients wh have had a breast reduction.

Conclusions

Vertical mammaplasty has many advantages:

- The markings can be adjusted for all patients
- The upper pedicle of the areola is larger i larger breasts, making the procedure safe fo all sizes of breasts.
- The skin is not relied upon to support th breast.
- Stable results are produced because the glan is strongly sutured.
- Few postoperative complications occur.
- Limited scars only are created.

The drawbacks are that the result is not obtaine immediately after the operation, and that a se ondary minor procedure may be required afte several months in a few cases.

Liposuction of the breast has proved to be great addition to reductive procedures. Pe formed alone, it has limited indication, but as a adjunct to reduction surgery it facilitates mo eling of the breast, especially in major redu tions. It also removes the unnecessary fat tissu that may resorb when the patient loses weig after the operation and cause the final result t be altered.

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