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Breast Augmentation.

Breast augmentation is one of the most popular cosmetic surgical procedures. It is associated with extremely high rates of patient satisfaction. Implants, usually containing silicone gel, are inserted behind the breast via small incisions situated in the crease under the breast. The aim is to produce a natural and aesthetically pleasing appearance and feel to the augmented breast.



Pre and 6 months after 295cc Silicone Gel Implants inserted into a Dualplane II pocket.

Patients requesting breast augmentation often come from one of two cohorts, either women aged 18-25 years in whom the breast has never fully developed, or women who have finished their families and whose breasts have become empty. Some patients have other problems such as asymmetries, chest wall anomalies or tuberous breasts. These may require a modification of the traditional augmentation technique or additional surgery to further correct the problem either at the same time of as a later procedure.

Pre-operative advice.

Patients who smoke are at greater risk of complications including bleeding and wound infection and are therefore advised to refrain from smoking ideally for two to four weeks prior to surgery and a similar time period post-operatively. Patients should also avoid Aspirin and equivalent anti-inflammatory agents for two weeks prior to surgery as these can increase the risk of bleeding.

It is recommended that patients on the combined oral contraceptive or HRT (not the progesterone only mini pill) should stop taking this medication for four weeks prior to surgery, as they are associated with an increased risk of deep vein thrombosis (DVT). During this period, where appropriate, alternative forms of contraception should be used.

What happens before the operation?

At the initial consultation after a discussion regarding the specific concerns a full medical and surgical history will be obtained. Details regarding the operation, the aims, the limitations, the recovery and the risks will be discussed. Before the operation you will usually attend for a pre-operative nurse led assessment. You may require a blood test. Any significant health problems not previously identified may be discussed with Mr Cadier or the anaesthetist, and a further assessment may be required to determine suitability for the procedure. At admission the nurses will again assess you and you will be measured for a pair of compression stockings. These are worn to reduce the risk of thrombosis formation and should be worn for a minimum two weeks post-operatively. You will be seen by the anaesthetist prior to surgery and be able to discuss issues pertaining to the anaesthetic and also pain relief in the immediate post-operative period. You will also see Mr Cadier who may make some pre-operative markings and will take photographs for the medical records.

The operation.

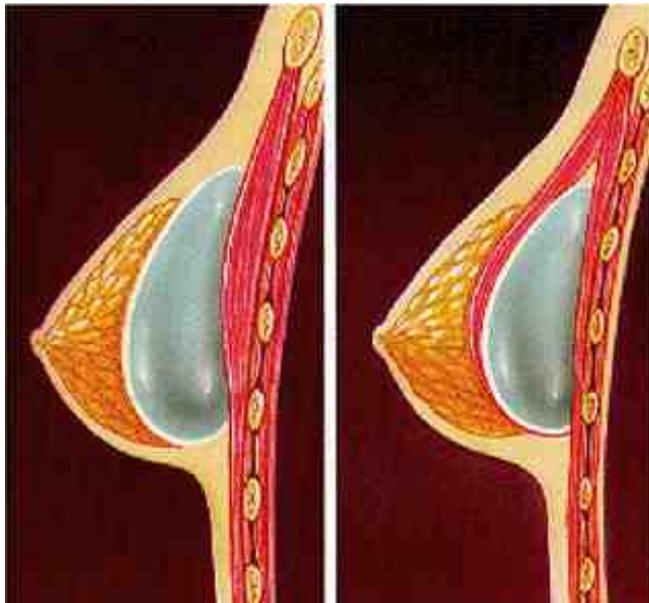
The operation of breast augmentation is undertaken under general anaesthesia and usually takes approximately 1 to 1¼ hours. The operation is undertaken on the day of admission and

patients stay in hospital for one night following surgery. The stitches that are used are self-dissolving and drains are usually employed in submuscular placements. These drains are usually removed on the day of discharge but may be left in longer should there be significant oozing.

The implant pocket.

The implants are placed in pockets designed to give the most natural look, this being a balance between providing enough padding to minimize implant visibility, allowing the implant to sit in the breast (important when there is an element of breast droop), and reducing undesirable side effects such as squeezing of the implants on certain movements. In all cases the implant is placed behind all of the breast tissue. The exact placement is tailored to the needs of the

individual.



The pocket can be in front of the muscle either in a sub-glandular position, or in a sub-fascial pocket. In this latter placement the implant is placed behind a gristle layer that sits in front of the muscle. This helps to improve the takeoff of the breast in the upper portion and so can give a more natural look.

In patients who are very slim the implant is usually placed behind the muscle to improve the takeoff and reduce implant visibility. This is the sub-pectoral pocket. In some patients it may be desirable to place the top half of the implant under the muscle and the bottom half just behind the breast. There are several variations of this placement, usually termed Dualplane I, II and III. These placements are particularly useful in slim patients where this is an element of breast laxity, or droop.

The implant types.

There is a very large range of breast implants available with sizes ranging from 80 to 800 cc. Larger sizes are available but only on a custom made basis. The implants can either be round or breast shaped (often termed tear-drop, anatomical or bio-dimensional). In most augmentations round implants are used. These have the advantage of looking natural both when upright (as the filler will tend to move down in the implant), and when lying (the filler will move to the side). In shaped implants the shape is constant in both positions. Also if a shaped implant rotates a very undesirable appearance will result.

At the current time all the breast implants that are available are made of silicone in their outer layer (some now have polyurethane covering this). The filler material can either be silicone gel or saline (salt water). Most surgeons feel that the silicone gel containing breast implants give a more natural shape and feel to the breast. In recent years the silicone gel within the implant has been rendered cohesive. The cohesive gel is more bound together, this giving the advantage of reducing gel leakage whilst at the same time maintaining a natural feel. There are several grades of cohesiveness available though firmer, more cohesive, implants are only used in exceptional circumstances.

There have been a number of concerns over the years regarding the safety of silicone gel implants though at the current time there is a very substantial body of evidence and research, which has confirmed the safety of these implants. For further details regarding this, the following websites are recommended:

1. Information from BAAPS (British Association of Aesthetic Plastic Surgeons):

<http://www.baaps.org.uk>

2. Information from UK government organization:

<http://www.mhra.gov.uk>

3. Information from US government organisation:

<http://www.fda.gov/MedicalDevices>

Determining the implant size.

One of the key factors in determining the success of the augmentation is getting the right size of implant for the patient. Too small and patients feel that will not have benefited from the operation. Too large and the implants will look unnatural and not fit the frame of the patient. Also clothing will not fit properly and the heaviness of the implants can predispose to premature drooping of the breasts. There are no ideal ways in which to find the right size. At the initial consultation Mr Cadier will suggest a suitable range of sizes dependent on your specific wishes and also your current anatomy. Additionally a water bag technique for self-sizing will be described in the initial consultation, and all patients will be offered a sizing consultation with a specialist cosmetic nurse.

What to expect following surgery.

Your blood pressure and pulse will be taken regularly following your return to the ward. You will have an intravenous infusion (a drip), which is usually removed once you are able to tolerate diet and fluids comfortably. If you experience any pain or discomfort in the initial period following surgery painkillers are given either by injection or as tablets.

Appearance and sensation.

Following a bilateral breast augmentation procedure the breasts will inevitably feel tight and will often look too pert for two to three weeks following surgery. Sometimes the breasts feel too full in their upper portion. This will resolve over several weeks as the implants settle down and gravity takes effect. Some loss of sensation around the scar line and between the scar and the nipple is inevitable though this will recover but may take several months to do

so. Nipple sensation is frequently affected following breast augmentation often becoming hypersensitive and on some occasions painful. If this persists then the nipple/areola complex should be massaged and tapped to desensitize it. Avoiding touching or stimulating the nipple/areola complex will only prolong hypersensitivity. A few patients notice a reduction or loss of sensation in the nipple. In most cases this will recover spontaneously, though yet again this may take several months.

Pain relief.

Bilateral breast augmentation can on occasions caused a lot of discomfort especially with the submuscular placement. For the first few days following surgery it is advisable to take pain relief on a regular basis to keep on top of any pain or discomfort. After four to five days pain relief is usually taken only as required. Not infrequently patients find that the pain gets worse forty-eight hours following surgery and then may take several days before it resolves again. This is as a result of bruising and swelling. Pain relief should be prescribed prior to discharge.

In the initial 24 - 48 hours patients should avoid Aspirin containing or any other equivalent non-steroidal anti-inflammatory agent (including Brufen, Ibuprofen, Neurofen and Voltarol) as this may increase bruising.

Dressings/Stitches.

At the end of the operation tape is applied to the wound underneath the breast and this is then covered with a light dressing. A further light dressing is placed over any drain sites. If the drains are required to be left in after discharge then you will be shown how to look after the drains and will be attending for drain inspection and removal between one and five days postoperatively (occasionally longer). At that time the dressings will be inspected and changed if required. Alternatively, if the drains have been removed prior to discharge then an appointment to be reviewed by the nursing staff in the outpatients will be made seven days following discharge and at that time the dressing will be changed.

The wound should be covered with a dressing for approximately ten days following surgery and during this time the wounds need to be kept dry. A small sterile tape will have been applied to the wound at the end of surgery. Ideally this should be left on as long as possible, though if it has not come off by itself at 3 weeks it should be peeled off. At three weeks following surgery it may be beneficial to apply some Vitamin E containing cream or ointment to the scar line once or twice day for a few weeks just to minimize the scarring. All of the stitches are self-dissolving and none will need to be removed. Occasionally at the ends of the scar line you may notice a small lump or feel the end of the stitch. This is entirely normal and no action is required as the stitch will dissolve away in due course.

Underwear.

Patients are advised to put themselves into a sports bra' as soon as possible following surgery. The sports bra' should be kept on for a total of six weeks being worn both day and night. The purpose of the sports bra' is to offer gentle pressure around the breast to help the implant bed in and also to keep it in the right position. After the six week period normal bra's can be worn including under-wired ones.

Sleeping.

Initially many patients find it too uncomfortable to sleep on their side or on their front. This discomfort will settle after two to three weeks. Patients who sleep on their front may experience difficulty as a result of the presence of their new breasts though lying on them after two or three weeks will not cause any problem.

Activities.

For the first week following surgery patients are advised not to drive as not only will the safety belt potentially put undue pressure on the breasts but also because patients will not be able to react properly in the event of an emergency stop. Most patients take one to two weeks off work although some patients return after a shorter period of time. Some patients where

work involves a lot of manual activities including heavy lifting may require a longer period of time off. Advice regarding this will be given at the initial consultation.

For patients with children, especially young babies or toddlers, help will be required in the initial two weeks following surgery. Sporting activities including gym work, tennis and badminton should be avoided for between four and six weeks following surgery and any vigorous sporting activities where contact is possible should be avoided for three months. There are no specific restrictions on sexual activities but the breasts should be handled with care for several weeks following surgery.

Follow up.

Patients are usually reviewed by the nursing staff for wound check at seven days postoperatively and then in the outpatient clinic by Mr Cadier at one and six months postoperatively.

Realistic expectations.

Breast augmentation obviously increases the size of the breast but does not necessarily correct pre-existing problems. Patients with breasts that have a large gap between them will still have a gap (though frequently smaller) as the gap is as a result of the width of their breastbone. In these cases, if the implants are placed closer together the implant edge may become visible and the nipple will not be centred on the mound of the breast. Similarly, patients with breasts that point outwards will still have the same configuration post breast augmentation.

With a small amount of breast droop the augmentation may appear to correct this however when marked the droop will still be present and can sometimes appear as a double bubble in which the original breast droops off the implant mound. In some patients this still produces an acceptable result, but in others a breast uplift will be required. The amount of breast droop will be determined at the initial consultation and the consequences and options discussed.

No one is perfectly symmetric and in any individual their breasts will frequently have slight differences in size, shape and nipple position. Additionally there may be slight differences in the chest wall muscles and in rib cage shape on either side. These differences will usually be identified at the initial consultation and the effect on the result discussed. In patients with significant differences in nipple position this may become more noticeable post augmentation and occasionally it is appropriate to undertake a nipple repositioning procedure. In patients with size differences either a small amount of tissue can be removed from the larger breast or different sized implants can be used.

Risks and complications.

As with all surgery complications can occur. Fortunately with breast augmentation they are relatively uncommon and in most cases can be resolved with no significant longterm effects.

They include:

- Anaesthetic risks – these will be discussed with you by the anaesthetist before surgery
- Bleeding
- Hematoma
- Infection
- Wrong or faulty position of the implant
- Hyperdynamic / Excessive movement on pectoral muscle contraction
- Wrinkling of the skin over the implant (ripples and knuckles)
- Persistent pain
- Changes in nipple or breast sensation
- Poor scarring
- Fluid accumulation (seroma)
- Implant leakage or rupture
- The formation of tight scar tissue around the implant (capsular contracture)
- Possibility of revisional surgery
- Anaplastic Large Cell Lymphoma (ALCL)

In the first few hours following surgery bleeding may occur such that a collection of blood accumulates around the implant. The breast swells massively and patients need to return to the operating theatre for evacuation of the blood (haematoma) and cautery of any bleeding points. There are no longterm sequelae. The risk is about 1:250.

Infections around the breast implant usually occur at 1-2 weeks following surgery. The breast swells, becomes painful and red and in some cases there is a purulent discharge from the wound. Patients need to return to the operating theatre for a washout of the wound and in most cases the implant will need to be removed. After 3-4 months once everything has settled down it can be replaced. Fortunately this is a rare complication and occurs in less than 1:1000 cases.

Occasionally the implant sits in the wrong position. This may be due to breast asymmetries or chest wall anomalies (as discussed above) or may be due to the implant moving within the pocket. In some cases when an undesirable appearance results the implant needs to be re-positioned though this is usually deferred for several weeks as the implant(s) may re-position itself into the correct place spontaneously as the swelling dissipates.

When there is relatively little tissue covering the implant some visibility may occur. This is manifested as ripples, usually occurring in the upper inner aspect of the breast. Modern implants are designed to have low ripple rates but if it should occur the most common corrective measure is to re-position the implant into a deeper pocket, which in itself may have problems. Some palpability of the implant in the crease under the breast is common. It is of no concern and does not affect the cosmetic result.

When implants are situated behind the muscle some squeezing of the implant will occur upon muscle contraction. In most cases this is mild and of no consequence however in some patients it is marked. In these rare cases one solution is to re-position the implant in front of the muscle, however this can result in implant visibility and so may not be a viable corrective measure.

Most patients will experience some pain and discomfort for the first few days following surgery. Some patients experience pain beyond this time period, often as a dull ache, which may be aggravated by touch or exertion. If this does occur usually it will settle spontaneously but this may take several months. Occasionally a course of medication is required, especially when the pain appears to be nerve related.

In all patients there will be a small scar under the breast. This usually fades and becomes very inconspicuous over time. In some patients, especially those with very pale skin the scar may become raised and red and may take many months to settle, sometimes requiring some scar treatment to speed up the process. In patients with a coloured skin the colour of the scar may be paler or darker than the surrounding skin rendering it more conspicuous.

Seromas are an unusual problem following breast augmentation and represent an accumulation of blister-like fluid around the implant on one or both sides. Patients notice a sudden swelling of the breast. This can occur several years following surgery and may be precipitated by a violent bout of exercise. In most cases this is not a significant problem and treatment is usually non-surgical and includes wearing a compression bra, avoiding the precipitating exercise and taking anti-inflammatory medication. However, because of the very rare risk of BIA-ALCL (see below) patients should always seek medical advice, and ideally return to Mr Cadier for review.

When a breast implant is inserted the body will automatically put a layer of scar tissue (a capsule) around the implant. In most cases this is of no consequence. However in some patients, for reasons not fully understood, the scar tissue thickens and squeezes the implant. This is termed capsular contracture. This may occur at any stage following augmentation, though it is unusual in the first year. It can come on slowly or rapidly and affect one or both breasts. In many cases it is manifest by firmness of the implant, but in severe cases the implant becomes hard and painful and the breast shape is distorted. Capsular contracture is detected in about 1:10 to 1:20 patients at 10 years following augmentation, though only about 1:25 to 1:50 require treatment. The treatment is surgical and patients should be aware that they would be liable for treatment costs.

All breast implants leak tiny quantities of silicone into the surrounding tissue. This microscopic leakage has been known about for many years and initially it was thought that it might be associated with skin and joint conditions. This is now known not to be the case, though for further information the websites described above should be looked at. Modern implants incorporate special shells and the filler gel is cohesive, these both being designed to minimize any silicone leakage.

The breast implants used by Mr Cadier are all state of the art being made by highly reputable companies and are extremely well designed and subjected to rigorous tests. Breast implants will not rupture when going in airplanes, contrary to some popular belief. It is recognized that with some implants over the course of many years the shell of the implant may develop cracks and silicone gel can be found between the capsule and the implant shell (termed intra-capsular rupture). Usually this is not associated with any symptoms, and may be picked up when a patient is having a scan or mammogram for some other reason. In these cases patients are advised that it is probably appropriate for the implants to be changed as it is possible that over the course of several more years that free silicone gel may be found outside of the capsule in the breast tissue (termed extra-capsular contracture). This free silicone gel can form lumps in the breast (granulomas) which in themselves are not dangerous but can be potentially confused with breast cancers. It should be stressed that even with the implants used 15-20 years ago (which neither had cohesive gel nor extra barriers as found in the modern implants) that the incidence of granuloma development, even after 20 years, is very small.

With all surgery there are anaesthetic and general risks, including chest infections, allergic reactions and deep vein thrombosis (this can lead to potentially life threatening pulmonary embolism). All patients will be assessed before admission in a nurse led clinic and all will be assessed on admission before the surgery by the anaesthetist.

Risks and complications will be discussed and all efforts made to minimize any risks. Patient safety is always our first concern.

Longterm advice

Many patients having breast implants may go on to have children. Breast augmentation has no effect on breast-feeding and silicone has never been detected in breast milk (it should be noted that teats on baby bottles are routinely made of silicone). Some patients may require mammograms following augmentation. Patients should advise the doctor or nurse that they have silicone implants as 1-2 extra views may be required and some breast screening units may undertake ultrasound scanning to supplement or replace the mammogram.

There have been many studies looking at the effect of breast implants on breast cancer screening. These have shown that the presence of the implant does not affect the ability to detect cancers. Patients having breast screening should nonetheless let the screening unit know that they have implants. Excessive compression of the breast during screening is not advised, and patients may require extra mammographic views to see all of the breast tissue and an ultrasound may additionally be advised. The effect of breast implants on breast cancer rates has also been extensively studied. There is no clear consensus but the overall view from the medical literature is that implants have no significant effect, either positive or negative on breast cancer development.

Anaplastic large cell lymphoma (ALCL) is an extremely rare type of cancer that can occur in adults and children. Over the last two decades, there have been rare reports of ALCL occurring in the scar tissue surrounding breast implants. This has led the medical community to recognise a new and different type of ALCL, referred to as Breast Implant- Associated ALCL (or BIA-ALCL for short). BIA-ALCL does not appear to behave in the same way as ALCL and in most cases is less severe. It should be noted that this is a very rare condition: at the time of writing (October 2018) there have been 500 cases reported worldwide since 1997, with an estimated 10 million implants inserted during the same period. Although there have been 17 reported deaths to date, BIA-ALCL in most cases is readily treatable by removing the scar tissue surrounding the implant and replacing the implant. It usually presents in women 8-10 years following implant insertion with sudden swelling of the breast as a result of a fluid collection – a seroma. Should this occur patients should seek urgent medical advice.

In the past patients were advised that their implants would need to be changed at 10 years. This is no longer considered to be correct and implants may last much longer, and in an older patient may never need to be changed. The commonest reasons for changing implants is patients requesting size changes or developing one of the problems as described above, in particular capsular contracture.

Early identification and prompt intervention is important and should patients have any cause for concern they should either contact the hospital or Mr Cadiers' secretary, the contact details being shown below. Most of the time, the surgery and the subsequent post-operative recovery are uneventful. When complications do occur all attempts are made not only to remedy the problem in as speedy a manner as possible but also to optimize the final result. As with all cosmetic surgical procedures undertaken by Mr Cadier, there is a fixed fee policy, which means that no further charges are incurred for the treatment of complications that occur within 6 months following the initial surgery. **On the unusual occasions when revisional surgery is required, provided that this is identified and agreed to prior to six months following the original surgery, and undertaken within 12 months of the original surgery, then no charges will be incurred. Any subsequent revision or patients seeking revisional surgery after six months will incur costs.**

The vast majority of patients are delighted with the result of breast augmentation surgery. In many it results in a dramatic increase in self-confidence and patients feel not only more proportioned but also more feminine.

About your Surgeon:



Michael Cadier was educated at the French Lycée in London, studied at Oxford University and undertook Medicine at St Thomas' Hospital, London. After training in London, Salisbury and Bristol he became an NHS Consultant in the Supra-regional Plastic Surgery Unit in Salisbury in 1996, becoming Head of this Service in 1999. In his NHS practice he developed a breast reconstruction service in Portsmouth, and in 2000 was appointed as cleft surgeon to the newly established Spires Cleft Centre, for which he also became the first Clinical Director in 2002. He undertook yearly cleft lip and palate Charity missions in rural Pakistan from 1996 to 2009.

He has a busy aesthetic surgery private practice along the South Coast, undertaking the full range of aesthetic surgery procedures. He has performed over a thousand facelifts, and over 1500 breast augmentations, with similar numbers for all of the more common aesthetic procedures.

He is widely published, and lectures and teaches on aesthetic surgery both nationally and internationally. In 2006 he was invited to become an examiner for the FRCS (Plast). He is the Program Director for the South Coast Reconstructive Cosmetic Surgery Fellowship, was part of the first UK delegation in the CEN in cosmetic surgery (European regulation) and chaired the CSIC Royal College committee on Clinical Quality and Outcomes in Cosmetic Surgery.

The British Association of Aesthetic Surgeons (BAAPS) is the leading organization for aesthetic surgery in the UK. He was elected to BAAPS Council in 2006 and was President of BAAPS from 2014 to 2016. One of his key objectives is to ensure that UK plastic surgeons of the future will practice aesthetic surgery to the highest possible and with that aim he has helped establish a comprehensive national training program in aesthetic surgery.

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