**Mr Michael Cadier**

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**Consultant in Plastic, Reconstructive & Aesthetic Surgery**

**Nose re-shaping**

The nose forms the central portion of the face and therefore has a very significant impact on facial aesthetics. As a result of this, a nose that is out of proportion (too large or too small), or has a shape that is not in keeping with the rest of the face shape, or has a shape disturbance (for example a dorsal hump, an overhanging tip or a bulbous tip) can have a dramatic effect on facial appearance. These changes may be familial or may result from trauma. The nose additionally has role in the airway, which may be affected as a result of alteration of the shape of the internal nasal passages. Whilst most rhinoplasties undertaken by Mr Cadier are essentially cosmetic in nature, in some cases the aim may also be to improve the nasal airways.

**What types of surgical procedures are available?**

**Tip-plasty -** In this operation the aim is to alter the shape of the tip of the nose only. No bony work or fracturing is undertaken. An open approach (an incision inside the nostril rim connected across the columella – the bit of tissue between the nostrils) is usually required. The procedure is performed as a day case under general anaesthetic and takes about 45 minutes.

**Nasal rasping -** In this operation a mild bump on the dorsum may be corrected by rasping alone through an incision within the nostril. This is more commonly undertaken as a revision procedure and is usually performed as a day case under general anaesthetic and also takes about 45 minutes.

**Closed rhinoplasty -** In this operation, the shape of the whole nose is altered via a closed approach (the incisions are placed along the inside of the nostril rims with no external skin incisions). The bone and cartilaginous elements are reshaped using a variety of techniques and a new nose shape is created. This technique is suitable when there is minimal tip work required and no major shape disturbance (excessive size, marked overhang or deviation). It has the advantage over an open rhinoplasty of avoiding any external scars and being quicker in the recovery period (less swelling) but the disadvantage of less visualization of the bony cartilaginous framework (in particular the tip) and therefore is not suitable for more complex noses.

**Open Septorhinoplasty -** In this operation, the shape of the nose is altered via an open approach (the incisions are placed along the inside of the nostril rims and across the base of the columella (the portion of skin between the nostrils) allowing full exposure of the bony cartilaginous framework of the nose). The bone and cartilaginous elements are reshaped using a variety of techniques and a new nose shape is created.

In some cases, a submucous resection of the septum may be required - a procedure whereby a portion of the nasal septum is removed in order to improve the nasal passages, or to help correct deviation, or to harvest graft material to reshape the nose.

**Secondary rhinoplasty -** The secondary rhinoplasty is an operation in which patients who have previously undergone rhinoplasty surgery wish to have further alteration in the nose shape. This is a procedure that is frequently more difficult as a result of previous surgery and scarring that will inevitably have ensued. In most cases an open approach is required. With all secondary rhinoplasties the aims and limitations need to be very realistic.

**Augmentation rhinoplasty -** This form of rhinoplasty is used when the nose is unduly small either as a result of a congenital anomaly, trauma, racial characteristics or substance abuse. The nose is reconstructed and augmented either using cartilage obtained from the septum, ear or from the rib. In some cases, temporalis fascia is required (this is a layer covering the temporalis muscle). It is harvested via a small incision in the scalp above the ear. No hair is removed, the wound is closed with 3 - 5 staples that get removed at the same time as the plaster of Paris from the nose. The scar is totally inconspicuous).

**Pre-operative advice.**

In order to optimize the result and minimize the risks a number of factors should be considered. Smokers have a much higher risk of developing complications. It is therefore advised that they should refrain from smoking for ideally 4 weeks prior to, and for 4 weeks following surgery. Aspirin and related anti-inflammatories (other than those prescribed during the admission) should be avoided for one week before and 48 hours after surgery as these can significantly increase the risk of bleeding. Many supplements (gingko, ginger, turmeric, garlic) have anti-coagulant effects and therefore can increase the risk of bleeding and bruising and should be discontinued for a similar time period. The use of arnica is debatable with no clear evidence to support either its use or its avoidance.

It is recommended that patients on the combined oral contraceptive, and hormone replacement therapy, should stop these for four weeks prior to, and four weeks after surgery, as they may be associated with an increased risk of deep vein thrombosis (DVT). For patients on the pill alternative forms of contraception should be used.

Patients who are overweight also have a higher risk of complications. If patients are dieting, they should aim to get to their desired weight pre-operatively. Mr Cadier and his team have the policy that such surgery will only be offered to patients with a Body Mass Index (BMI) of less than 36. The BMI is calculated from the weight and height, and there are many simple tools available on the internet to help perform this calculation. Patients with a BMI of 36 or over have much higher risks both from the surgery and the anaesthetic and the risks therefore potentially outweigh the benefits.

**What happens before the operation?**

At the initial consultation with Mr Cadier after discussing regarding the specific concerns a full medical and surgical history will be obtained. As part of the consultation a psychological assessment is made to ensure that it is appropriate to undertake the surgery, and on occasions the completion of a psychological questionnaire may be required. In all cases Mr Cadier will write to the GP to request a past medical history. Patients may refuse this but need to be aware they are exposing themselves to more risks should they omit or forget some relevant past medical history. Also, in the post-operative period should there be any problems it is important that the GP is aware what has been undertaken in order to be able to offer effective help and advice. At the consultation 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 you will again be assessed by the nurses 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 postoperatively. 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 operative procedure.**

The operation takes anywhere between 1 – 2 ½ hours to undertake depending on exactly what is required. The bony cartilaginous skeleton of the nose is exposed, either using a closed or an open approach and corrective surgery undertaken. At the end of surgery, sutures are applied, all of these being self-dissolving. In most cases, a plaster of Paris is applied to the nose and in rare cases a Vaseline-impregnated gauze pack is inserted into the nasal passages.

**What to expect immediately after the operation**

At the end of the operation a plaster of Paris will be applied to the nose which is usually kept in place with Elastoplast tape applied to the cheeks. Underneath the plaster of Paris on the nose, there will additionally be some tapes applied directly to the skin, the purpose being to mould the skin on to the bony cartilaginous skeleton underneath.

On return to the ward, patients will usually have an intravenous drip to provide fluids for the first few hours following surgery. A bolster will be placed underneath the nose to collect any discharge. Patients may experience bruising around the eye region and may have black eyes for between 1 - 3 weeks following surgery. The nasal pack (if used) is usually removed on the day following surgery and patients are allowed to go home. An appointment to re-attend 10 days later, for removal of the plaster of Paris in the dressing clinic, is provided at discharge. Sutures are used to close the wounds both inside the nose and on the base of the nose. All of these stitches are self-dissolving and those on the skin at the base of the nose are microscopic and will usually rub out by about ten days postoperatively.

**What to expect after discharge**

When the plaster of Paris is removed patients will have a clear idea as to what has been undertaken however the nose will still be slightly swollen. This is as a result of swelling within the skin, scar formation and healing within both the bones and cartilages. The presence of lumpiness, either to touch or on occasions to see, should not be a matter of significant concern as in the vast majority of cases these will resolve spontaneously. The full result of the nasal surgery cannot be judged for at least 9 months. In some patients, taping of the nose at night for several weeks after plaster of Paris removal is advised. This may help reduce swelling and may speed up the recovery. For several weeks and sometimes several months following surgery, the nose skin will feel numb and the tip of the nose feel woody and solid. These will all resolve by themselves. Patients will notice initially that the nose feels numb and hard especially at the tip. The numbness will gradually return to normal after several months and the woodiness of the nose will likewise settle but may take up to nine months to do so. In most cases there will be significant bruising around the eyes, which may persist for one to three weeks following surgery. On many occasions the bruising gets worse in the first two to three days following discharge. In order to reduce the degree of swelling and bruising, patients are advised to sleep on two or three extra pillows at night and possibly also to raise the head end of the bed for several days following surgery.

**Pain relief**

The rhinoplasty procedure is not normally associated with significant pain or discomfort. Immediately following surgery pain relief will be offered and should be taken on an as required basis.

**Glasses and contact lenses**

As a result of the plaster of Paris and swelling around the eyes, patients will not be able to wear glasses or contact lenses for several days following surgery. The plaster of Paris will prevent glasses from being properly worn and even when the plaster of Paris has been removed, glasses should be worn with extreme caution to avoid disturbing the nasal bones where the glasses rest on the bridge of the nose. Avoidance of any pressure on this area is essential for several weeks following surgery.

**Activities**

Whilst the plaster of Paris is in place, patients are advised not to drive. Once the plaster of Paris has been removed, patients are advised to be cautious and avoid vigorous activities or sports (including swimming, tennis, aerobics) for 4 - 6 weeks, as the nose is still somewhat fragile during this time. For sports where contact is possible, these should avoided for 3 months.

**You are advised to refrain from flying for 4 weeks before surgery and for at least four weeks postoperatively. Please discuss any travel plans you may have around the time of surgery with Mr Cadier before proceeding with the booking.**

**Follow up**

Patients will be reviewed by the nursing staff on removal of the plaster of Paris at one week following surgery and then subsequently by Mr Cadier at 1 - 2 months and 9 months. The appointment for the removal of the plaster of Paris should be made prior to discharge and the appointments to see Mr Cadier will be sent in the post.

**Realistic expectations**

Whilst all attempts are made to try to match patient expectations there are limitations to nose reshaping procedures. No faces are entirely symmetric and there are sometimes marked differences between the sides in terms of the underlying bony structure. The skin envelope also is very variable. With thinner skins minor irregularities will be more visible and with thicker skins less definition is possible. The degree of internal scarring also varies hugely. When the nose is deviated before surgery some residual deviation is very common although usually not conspicuous. In patients where there has been previous trauma, and especially when the nose has previously been operated on whilst improvement is expected absolute perfection is seldom, if ever obtained. Matching expectations with realistic outcomes are one of the key features in obtaining a successful result.

**Risks and complications**

As with all surgery complications can occur, these include:

* Bleeding
* Septal haematoma
* Septal abscess
* Septal perforation
* Infection
* Sinusitis
* Wound dehiscence
* Skin necrosis
* Poor scar
* Scar hypertrophy
* Persistent swelling
* Nasal blockage (Mucosal thickening, Synechiae formation, Nasal valve collapse)
* CSF leak
* Contact dermatitis
* Numbness and pain in incisors
* Loss of smell and taste
  + Upper third
    - Deep or shallow bridge
    - Widening or asymmetry on front view
    - Convexity or over reduced on side view
  + Middle third
    - Wide, convex, saddled or asymmetry
  + Lower third
    - Tip problems: boxy, pinched, asymmetric, under/over projecting
    - Columella problems: wide, hanging, asymmetric
    - Alar notching, collapse, overhang
  + General
    - Polly beak nasal deformity
    - Disproportionate nose
* Deep vein thrombosis and life-threatening pulmonary embolism
* Anaesthetic complications – these will be discussed with you by the anaesthetist before surgery.
* Death

In the initial stage following surgery, the main risks are of bleeding. Very occasionally, patients need to be readmitted in the initial few days following surgery for nasal packing. This is a rare complication. Infections can occur in all wounds and may cause redness and swelling, a nasal discharge, a smell or very rarely damage to cartilage grafts within the nose or of the overlying skin.

The airways and sense of smell may be reduced initially though in the vast majority of cases will resolve spontaneously within a few weeks. These should not be a cause for concern. The nose skin will initially have reduced sensation and care needs to be taken when exposed to sun as sunburn can occur easily. Patients are advised to use high factor sunblock for several months following surgery if exposing their nose to the sun.

When the septum has been exposed as part of the procedure bleeding can occur within the lining of the septum within the nose resulting in a septal haematoma. This causes swelling and pain and can predispose to a septal abscess. This unusual complication is treated by surgical drainage. When a portion of the septum has been removed (to help with correction of airways blockage, or to obtain graft material) a septal perforation may rarely result. When large they may be unnoticed but when small they may result in a whistling sound. Surgical correction may thus be required.

The scar at the base of the nose is usually very inconspicuous. Although initially it may be red it usually fades over several weeks to become a pale line scar. Wound breakdown and scar hypertrophy (the scar becomes raised and red) are very rare complications that may result in revisional surgery being required.

Although swelling is normal and will take many months to fully resolve in some patients (especially with repeat surgery or thick skin) the swelling may be prolonged and take 1 - 3 years to fully settle. Prolonged taping or very rarely steroid injections may help. Repeat surgery is not recommended.

Skin necrosis is a rare complication. A portion of skin on the nose may die as a result of impaired blood supply when the skin is very thin, often aggravated by an infection or severe bruising. In most cases this leads to the development of a black scab on the nose that is visible on removing the plaster of Paris. No treatment other than antibiotics (if an infection is present) is required and in most cases the area will heal in by itself over 2 - 3 weeks. Any resulting scar or depression may be improved at a much later date by revisional surgery, however, in most cases nothing is required.

The most common complication following rhinoplasty surgery is dissatisfaction regarding the final shape. This may be as a result of adverse healing which can alter the shape of the nose leading to an undesirable aesthetic result or may be due to the expectation of the patient not having been understood or achieved. However, because it takes9 months for the nose to settle, the final result of the nose should not be assessed until this time period has expired. In approximately one in ten to one in twenty cases, some revisional secondary surgery will be required. This is frequently relatively minor and often undertaken as a day case procedure.

Following any surgery there is a risk in developing a deep vein thrombosis (DVT). This is a clot in the calf vein of the leg. In itself it may result in pain and swelling. The risk is that should the clot separate from the vein it can move to the lungs resulting in a pulmonary embolism. This is a potentially life-threatening situation. All attempts are made to reduce the risk using compression stockings during and for 2 weeks after surgery, using pneumatic compression devices on the legs at surgery and in the immediate post-operative period, by encouraging early mobilization, advising patients to stop the combined oral contraceptive pill or Hormone Replacement Therapy (HRT) 4 weeks prior to surgery and for 4 weeks postoperatively, and where it is felt appropriate using injections of blood thinning agents.

All surgical and anaesthetic procedures have risks, and some are life threatening, these include pulmonary embolism, anaphylaxis (severe allergic response to a medication) and adverse drug reactions. Death however remains an extremely rare complication.

When complications do occur, all attempts are made not only to remedy the problem in as speedy a manner as possible but also to optimise 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 are identified within 6 months following the initial surgery. Revisional policies for aesthetic concerns have changed and, in most cases, additional fees will be incurred. Patients need to be aware regarding the limitations of surgery and have very realistic expectations about outcomes.

Most patients are delighted with the result of surgery and derive a huge benefit in terms of self-esteem.

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**About your Surgeon:**

A person wearing a suit and tie

Description automatically generatedMichael 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. In 2015 he became fully private, concentrating solely on aesthetic surgical practice.

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 standard and with that aim he has helped establish a comprehensive national training program in aesthetic surgery.