How common are calf, buttock, and male pectoral implant surgeries in your practice? Do you feel this reflects your particular patient population demographics? Why do you think most plastic surgeons rarely, if ever, perform these procedures?

Lloyd N. Carlsen, MD, Scarborough, Ontario, Canada:
Buttock and pectoral implants are relatively uncommon in my practice; I perform only 3 or 4 per year. Calf augmentation is more common for me, probably because I was the originator of that surgery; we average about 20 per year. I think the demand for buttock and pectoral implants is very low, and, for that reason, most surgeons are not performing these procedures. I think it is not widely known by the public that calf augmentation is available for cosmetic or reconstructive surgery.

Adrien E. Aiache, MD, Beverly Hills, CA: Calf, buttock, and male pectoral implant surgeries are not extremely common. However, there is a small but steady stream of patients, many from far-off places, who desire these procedures and are referred to me by other plastic surgeons.

It may be that most plastic surgeons rarely perform these procedures because they are associated with a higher complication rate than many other implant procedures, such as breast implants. Because of their consistency, even greater precision is required for their implantation.

Hugo Amezcua, MD, Guadalajara, Jalisco, Mexico: Calf and buttock augmentation surgeries are fairly common in our practice, but we are rarely asked to perform male pectoral implant procedures.

What percentage of patients requesting these procedures is referred by other patients and what percentage by other physicians? What is the percentage of patients requesting these procedures for reconstruction of congenital or acquired deformities compared with those seeking elective cosmetic augmentation?

Dr. Carlsen: Approximately 80% of my patients undergoing these procedures are referred by former patients and 20% by physicians. Seventy percent of pectoral implantations are for reconstruction. All buttock augmentations are cosmetic. For calf augmentation, 65% are cosmetic; the rest are reconstructive. The typical patient for a male pectoral implant has Poland’s syndrome and wants his chest balanced. But there are also bodybuilders who just want a larger chest.

Dr. Aiache: About 90% of these patients are referred by other patients. About 25% come for reconstruction of congenital or acquired deformities; however, these are the most challenging surgeries, and I frequently decline to perform the procedures on those patients because of the potential for complications.

Rafael Vergera, MD, Guadalajara, Jalisco, Mexico: About 80% of our patients are referred by other patients and approximately 20% by other physicians. Only about 10% of our patients undergoing calf and buttock augmentation present for reconstruction of congenital or acquired deformities; approximately 90% request cosmetic augmentation.

Can you describe the typical patient for each type of implant?

Dr. Carlsen: The typical patient seeking calf augmentation for cosmetic purposes wants the leg to appear more in balance with the thigh. The patient with a hypoplastic leg wants it built up to look normal.

Dr. Aiache: For buttock implants, the typical patient is a woman who feels that she has a deficiency in that area. Calf implants are usually performed on women who feel that their legs are too thin and men who are ashamed of having “punny legs.” In the past, I had many bodybuilders coming for calf augmentation; however, the competition...
organizations now disqualify contestants if they have had calf implantation. Men who would like their chests to appear more masculine seek pectoral implants, frequently in conjunction with treatment for gynecomastia.

**Dr. Amezcua:** We see patients with gluteal ptosis and flaccidity; with these patients we use solid silicone-elastomer implants. We also see patients with good gluteal tone and prefer to use silicone gel-filled implants for them. In patients requiring or desiring greater projection, we also prefer silicone gel-filled implants.

**Dr. Carlsten:** For implant material, I prefer soft silicone rubber. There is a sufficient range of stock implants for 90% of patients. We have also used fat grafting for buttoc augmentation, but with unpredictable results.

**Dr. Aiache:** I have designed different implants. For the calves, although the FDA is not accepting an off-the-shelf type implant, companies are manufacturing implants that I designed. They are called “block implants” and are shaped before surgery by means of sculpting with a scalpel or scissors. For the buttocks, I have used my implant design, and apparently other companies, such as Silimed, in Brazil, are doing a good job with these implants, which are made of cohesive gel. For pectoral augmentation, the stock designs are quite adequate; I use about 3 different sizes. Usually there is a sufficient range of stock implants for these procedure, but in some unusual cases I may custom-fabricate them.

Because buttock implantation can present difficulties, I frequently suggest fat grafting in the buttocks with concomitant lipoplasty of the abdomen and back as a contour procedure, and this has yielded relatively satisfactory results. This is the only autogenous tissue I use for those techniques. Additionally, I often perform ankle-fat grafting in patients who want to have calf implants and who are still not completely satisfied with their ankle shape. For pectoral implantation, I use autogenous fat in patients in whom the pectoral implant is performed after a subcutaneous mastectomy for gynecomastia and there are residual excavated areas; the use of fat in these areas is relatively satisfactory.

**Dr. Vergera:** For calf augmentation, we prefer the Glicenstein and Montellano design. For buttock augmentation, we prefer the Vergera design of either solid-silicone implants or silicone gel-filled implants. A sufficient range of stock implants is available, and custom fabrication is rarely necessary. Although there may be a place for autogenous-tissue augmentation, it is not a technique that we use.

**What are the most common risks and complications of calf, buttoc, and pectoral implant augmentation?**

**Dr. Carlsten:** The most common risks and complications are seroma and implant show. Infection, hematoma, and pressure problems are uncommon.

**Dr. Aiache:** In calf implant surgery, you should not attempt to increase the calves too widely because there is a small virtual space and a significant potential for compartment syndrome. Other complications, such as bleeding, are seen only in secondary cases in which surgery has created a raw area leading to oozing and the existing capsule-lined implant pocket is unable to absorb the excess fluid, thus creating the potential for seroma and infection. Long-term complications can include a sudden increase in the size of the calf area as a result of capsule tearing causing a seroma or hematoma. In 9 calf implant surgeries of about 450 that I performed, patients were treated by means of complete implant removal and long-term capsule treatment.

Infections are usually more common with pectoral implantation than in breast implantation; I estimate the infection rate for pectoral implantation to be 6% to 8%. The second complication is seroma, which is often difficult to manage because, again, I believe, it is a result of capsular tearing.

In buttock implants, I have seen infections and seromas and difficult healing of the central wound that is used for the implantation. The new approach of subfascial implant placement is still not completely proven, because the fascia in the buttock area is nonexistent; at this point I am not sure that it is better than submuscular placement. An additional complication of buttock implants could be sciatic-nerve compression, especially in cases of firm silicone implants placed submuscularly. Displacement and unevenness are also potential problems.

**Dr. Amezcua:** The major complications of any of these procedures — and again, please note that we rarely perform pectoral augmentation — include seroma, hematoma, capsular contracture, asymmetry, infection,
wound dehiscence, implant exposure, and implant rupture.

What type of anesthesia do you prefer, and how much time does each procedure (calf, buttock, pectoral) take to perform? In what tissue plane are the implants placed?

Dr. Carlsen: I prefer general anesthesia. The procedures generally take an hour and a half. For male cosmetic pectoral implantation, I place the implant subpectorally; in reconstructive procedures, such as in patients with Poland’s syndrome, I place it subcutaneously and under any muscle available. In the buttock, I place the implants subcutaneously or beneath the gluteus maximus muscle. In the calf, I place them below the deep investing fascia.

Dr. Aiache: I prefer local anesthesia with sedation for calf implantation because an awake patient can help me avoid injury to the lateral peroneal and the sural nerves. I perform buttock implants with the patient prone and under general anesthesia. Patients also receive general anesthesia for pectoral implants, which I insert through an axillary incision. It is crucial to place calf implants under the deep fascia. I place buttock implants, as I mentioned before, either submuscularly, under the gluteus major muscle, or subfascially, under the poorly developed fascia of the gluteus major muscle. I perform pectoral implants submuscularly, placing them between the pectoralis minor, which must be left intact to prevent its avulsion and potential hematoma, and the pectoralis major.

Dr. Vergera: For both buttock and calf augmentation, we prefer epidural block anesthesia. Calf augmentation requires about 2 hours and buttock augmentation about 3 hours. We place the calf implants in the subaponeurotic space, but the buttock implants are placed intramuscularly.

What is your postoperative protocol, and when do you permit patients to return to full and unrestricted activities? Are there any permanent activity restrictions?

Dr. Carlsen: In these patients, I use an elastic-tape support dressing for 1 week and firm-support dressing for 3 additional weeks. All patients may return to full and unrestricted activities in 5 weeks. There are no permanent activity restrictions.

Dr. Aiache: Postoperatively, I allow patients with calf implants, including body builders, to return to full activity 3 weeks after surgery. There is no permanent activity restriction. Buttock implants are slightly different. With submuscular implantation, I allow patients to sit early on because the implant is placed high and is not going to be compressed with the patient sitting. The subfascial implant has to be treated more carefully because of the risk of breaking the scar and creating a seroma between the 2 implants in the central sacral area. With pectoral implants, patients are able to return to full activities within 3 weeks. It is possible, though, in the long-term postoperative period (6 to 10 years), that extreme activity might tear the periprosthetic capsule, leading to hematoma and seroma and secondary complications.

Dr. Aiache: Postoperatively, I allow patients with calf implants, including body builders, to return to full activities 3 weeks after surgery. There is no permanent activity restriction. Buttock implants are placed either submuscularly or subfascially, under the gluteus maximus muscle. In the calf, I place them below the deep investing fascia.

Dr. Vergera: We immobilize the surgical areas for 7 days with elastic dressing and for 3 more weeks with an elastic support garment. We also use prophylactic antibiotics, antiinflammatory medications, and, of course, analgesics, and begin 10 days of ultrasound treatments in the third week after surgery. We permit patients to return to full and unrestricted activities 1 month after surgery.

It is not uncommon for women with breast augmentation to express postoperatively the desire for even greater augmentation. Is this true with those who have undergone calf, buttock, or pectoral augmentation? What is the overall satisfaction rate for each procedure?

Dr. Carlsen: Ten percent of those with calf augmentation would like to have been made bigger. In buttock and pectoral augmentation, 20% of patients would like to have been bigger. However, the overall satisfaction rate for calf, buttock, and male pectoral implant surgery is about 95%.

Dr. Aiache: It is true that in breast augmentation, patients frequently express postoperatively the desire for greater augmentation. It is true in calf, buttock, and male pectoral augmentation as well. It is important, however, because of the high risk of seroma and hematoma in secondary cases, to resist the temptation to reoperate on these patients.

Dr. Vergera: Interestingly, we do not find this to be true with our patients who undergo calf or buttock augmentation, and we find the overall satisfaction for both procedures to be about 90%.


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