Prophylactic Antibiotics in Aesthetic Surgery

According to the authors, prophylactic antibiotics should not be used routinely in aesthetic surgery, but only when indicated by empirically-based criteria. Here they provide literature-based guidelines, advocate for new double-blinded studies, and advise aesthetic surgeons to decide on prophylactic antibiotic treatment by considering the relative risks and benefits in each individual case. (Aesthetic Surg J 2006;26:93-94.)

Various studies have demonstrated the efficacy of antibacterial prophylaxis in preventing postoperative wound infections in elective surgical procedures. Many publications in general surgery, oral surgery, otolaryngology, and orthopedic surgery address this topic. The prophylactic use of antibiotics in many specialties has steadily increased over the last 20 years, and aesthetic surgery has followed this trend. Currently, however, the use of antibiotics in preoperative prophylaxis has, in our opinion, escalated to a level of zealous excess and injudicious abuse. Some publications report that prophylactic antibiotics constitute as many as half of all antibiotics prescribed.

Plastic surgery literature has yet to address this issue with truly evidence-based criteria. Studies by Perrotti et al and Peled et al have shown that there are no uniformly accepted guidelines regarding the use of antibiotics. In fact, several studies about antibiotic prophylaxis have reached contradictory conclusions. Unfortunately, in daily practice, antibiotic prophylaxis is frequently determined by anecdotal information or the habits and personal preferences of the surgeon.

Factors to Consider

Wounds are commonly classified as clean, clean-contaminated, contaminated, or dirty. In aesthetic surgery, we deal primarily with clean and clean-contaminated wounds. Clean-contaminated wounds are wounds resulting from entry into the nasal or oral cavities, which are considered to have a high infection risk. The overall scientific consensus, and we agree, is that antibiotic prophylaxis should not be used routinely for most clean, elective plastic surgery procedures.

However, specific preoperative, perioperative, and postoperative factors add an increased risk of postoperative infection and must be considered in determining a prophylactic antibiotic regimen:

- Preoperative factors include diabetes, obesity, malnutrition, advanced age, recent surgery, steroid treatment, prior irradiation, and immunosuppression.
- Perioperative factors include extended hospitalization, local hygiene, and prior antibiotic treatment.
- Intraoperative factors include contamination, surgery that is lengthy, insertion of a foreign body or free graft, damage of tissues, use of drainage, hypotension, transfusion, and hypoxia.

The insertion of foreign bodies (implants) is an indication for preoperative antibiotics, and the possibility of contamination within nasal and oral cavities. On the other hand, the all-too-common administration of antibiotics simply because drains are placed is not scientifically substantiated in the literature. In our practice, we use the following guidelines:

- No antibiotic administration for face lift, blepharoplasty, lipoplasty, abdominoplasty, skin lesions, and scar revisions.
- Prophylactic antibiotic administration for reduction mammoplasty (organisms are present in the ductal...
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Figure. A, Preoperative view of a 47-year-old woman who had undergone her second kidney transplant and was reported to have adequate renal function (even though it was an ABO-incompatible kidney). She had been receiving chronic immunosuppression therapy. Her nephrologists did not object to her undergoing elective facial aesthetic surgery under general anesthesia, but advised her surgeon to be sure she maintained good oxygenation during the operation. This is a case in which, for empirical reasons, the decision was made to administer prophylactic antibiotics. In a patient undergoing a face lift under routine circumstances, prophylactic antibiotic treatment would not be administered in our practice. B, Postoperative view one week after meloplasty, submental lipectomy, and upper lid blepharoplasty.

Antibiotic Administration

The cephalosporins, the antibiotic treatment choice of most plastic surgeons, have a broad-spectrum coverage against gram-negative rods and gram-positive cocci. They are the agents of choice for treating skin flora, the most frequent cause of perioperative infections. Ancef (GlaxoSmithKline Inc., Triangle Park, NC) is the cephalosporin most commonly used. The most recent generation of cephalosporins have not demonstrated better efficacy and are considerably more expensive.

We recommend following the guidelines published in 1994 by Martin when using a prophylactic antibiotic. Administer a single dose of intravenous antibiotic within 30 minutes of making the skin incision. Intravenous administration is the preferred route, facilitating increased secretion and resulting in higher tissue levels of the drug. A second dose may be indicated if the procedure is longer than 4 hours. Postoperative administration of the same antibiotic that was administered preoperatively does not seem to add any benefit. The length of postoperative treatment has been debated, but there is no scientific evidence for extending the prophylactic antibiotic regimen beyond the perioperative period.

Conclusion

It is imperative for the aesthetic surgeon to be familiar with the literature and to decide on the need for preoperative antibiotic treatment based on individual patient factors, carefully balancing the risks and benefits in each case.

Performance of new double-blinded studies should provide guidelines based on scientific evidence. Interestingly, the main hindrance to conducting controlled, prospective, randomized trials is the reluctance of plastic surgeons to participate in them. This research is necessary, however, to further evaluate the role of prophylactic antibiotics in aesthetic surgery.

References


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