Medpor

https://www.stryker.com/us/en/craniomaxillofacial/systems/medpor.html

Indications

Reconstruction of frontotemporal lesions using Medpor® implants after the pterional approach improved temporal hollowing without additional complications [1].

The Medpor porous polyethylene implant provides benefits to perform sellar floor reconstruction when indicated. This material has been used for cranioplasty and reconstruction of skull base defects and facial fractures. We present the most extensive use of this implant for sellar floor reconstruction and document the safety and benefits provided by this unique implant. METHODS: The medical charts for 200 consecutive patients undergoing endonasal transsphenoidal surgery from April 2008 through December 2011 were reviewed. Material used for sellar floor reconstruction, pathologic diagnosis, immediate inpatient complications, and long-term complications were documented and analyzed. Outpatient follow-up was documented for a minimum of 1-year duration, extending in some patients up to 5 years. RESULTS: Of the 200 consecutive patients, 136 received sellar floor cranioplasty using the Medpor implant. Postoperative complications included 6 complaints of sinus irritation or drainage, 1 postoperative cerebrospinal fluid leak requiring operative re-exploration, 1 event of tension pneumocephalus requiring operative decompression, 1 case of aseptic meningitis, 1 subdural hematoma, and 1 case of epistaxis. The incidence of these complications did not differ from the autologous nasal bone group in a statistically significant manner. CONCLUSIONS: Sellar floor reconstruction remains an important part of transsphenoidal surgery to prevent postoperative complications. Various autologous and synthetic options are available to reconstruct the sellar floor, and the Medpor implant is a safe and effective option. The complication rate after surgery is equivalent to or less frequent than other methods of reconstruction and the implant is readily incorporated into host tissue after implantation, minimizing infectious risk [2].

Case series

Ninety-eight consecutive patients underwent reconstruction of pterional and temporal defects after FT and OZ craniotomy using the Medpor Titan implant. The implant was shaped to recreate the pterion to provide coverage for the cranial defect and to bolster the temporalis muscle to prevent temporal hollowing. The implant was then secured to the bone flap with titanium screws. Cosmetic evaluation was performed from both surgeon's and patient's perspective.

Of 90 patients who underwent cosmetic assessment at the 3 month follow-up, temporalis asymmetry was noticed subjectively by three patients and noted in 7 patients by the surgeon. Orbital asymmetry was not noticed in any cases by either surgeon or patient. Overall patient satisfaction was found in 89 of 90 patients (98.9%). There were no cases of temporal hollowing. One patient had a delayed wound infection, and one had an inflammatory reaction that required removal of the implant.

The technique using the Medpor Titan implant is a fast and effective method for pterional reconstruction after FT and OZ craniotomy with excellent cosmetic results and patient satisfaction. The implant combines the advantages of both porous polyethylene and titanium mesh, including easy custom-shaping without sharp edges, structural support and relatively lower cost. [3].

Liu et al. described their experience with the Medpor porous polyethylene implant for cosmetic cranioplasty and reconstruction after skull base surgery.

Medpor, a biocompatible implant, is flexible and can be contoured to facilitate surgical reconstruction of small to medium (< 8 cm) convexity or cranial base defects resulting from a variety of skull base approaches. This method provides similar cosmetic results to standard alloplast cranioplasty while decreasing operating time. The porous nature of the material allows ingrowth of soft tissue and bone to increase implant strength and decrease the risk of infection. This material can also be used safely in reconstruction of the cranium and skull base adjacent to the paranasal sinuses.

The authors have used the Medpor porous polyethylene implant in 611 standard cranial and skull base procedures and have achieved excellent cosmetic results and no implant-related complications [4].

1)
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