

An unusual complication of augmentation rhinoplasty: late displacement of dorsal nasal splint

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Abstract

Silastic® (Dow-Corning) implants are used for augmentation rhinoplasty. Complications following their use usually occur within the first 24 months. We report a case in which the dorsal splint became displaced spontaneously five years after surgery.

Key words: Rhinoplasty; Implants, artificial; Complications

Case report

A 50-year-old Caucasian furniture worker presented to our unit with a long-standing history of nasal obstruction and deformity. The severity of his symptoms had increased over the last three years, most notably following a nasal injury. Two previous septoplasties at another unit five and 20 years prior to coming to our department had failed to improve his nasal symptoms.

On examination he had a severe saddle deformity of the dorsum (Figure 1) with a posterior bony spur of the septum. He also had bilateral nasal polyps.

In October 1992, the patient had an augmentation rhinoplasty using a Safian Silastic® splint (Safian, 1966) to correct the dorsal deformity. He also had a nasal polypectomy in addition to a revision septoplasty using a Cottle's incision. The Silastic® splint was inserted using a mid-columella incision. The patient was satisfied with the initial results of surgery and was discharged from the unit 18 months later.

We were asked to see the patient again in November 1997. He had noticed that the prosthesis had moved out of place. He denied any history of trauma. He also complained of an increased difficulty in breathing though he was more concerned about the shape of his nose. On examination the splint had moved 90° from its original position (Figure 2). There was no evidence of infection or skin damage. The nasal polyps had also recurred.

The patient was admitted for a revision rhinoplasty shortly afterwards. The prosthesis was removed from the nose, refashioned and repositioned in the dorsum using an intercartilaginous incision. The patient was placed on a two-week course of antibiotics. The splints remain in place 12 months after surgery (Figure 3).

Discussion

Silastic® is generally considered to be the best implant material available despite having a high rate of loss of approximately 36 per cent (Milward, 1972).

Silastic® is solid silicone elastomer made of repeating units of strong silicon-oxygen bonds accounting for its stability with methyl side-groups. The viscosity can be

varied by lengthening the repeating basic units and cross-linkages (Mass *et al.*, 1998). The tissue reaction to Silastic® implants is characterized by a moderate tissue reaction

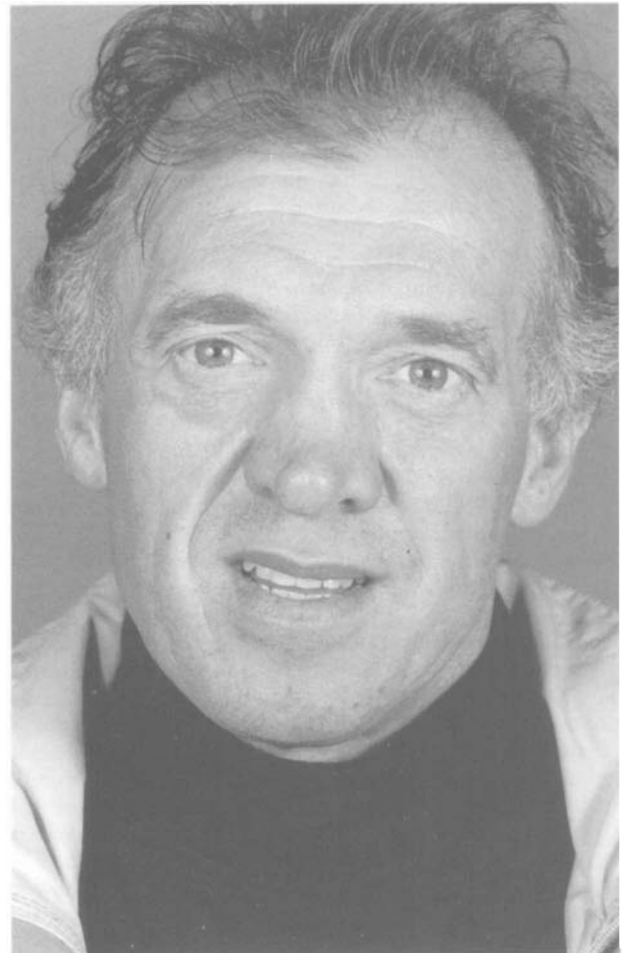


FIG. 1
Initial pre-operative photograph.

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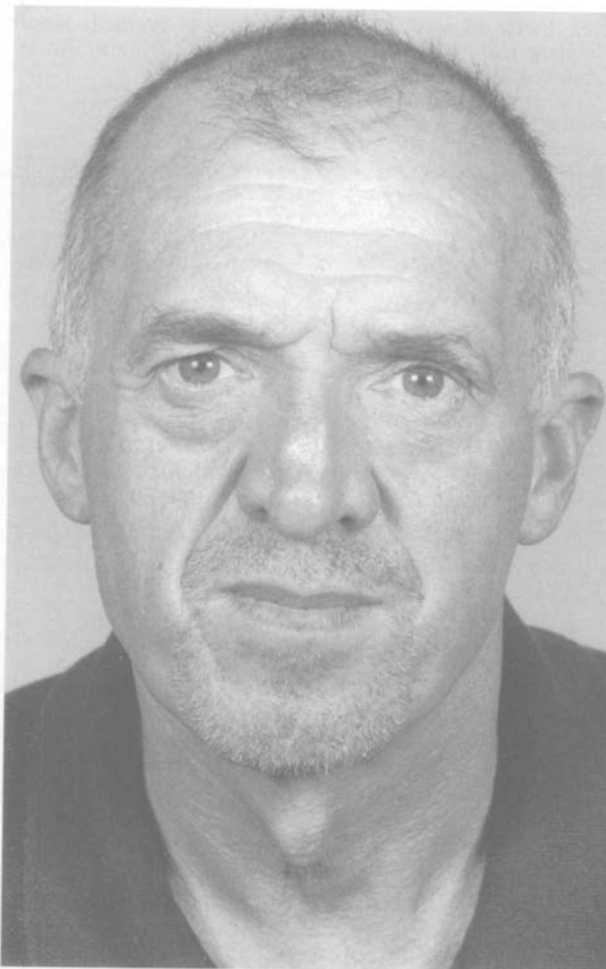


FIG. 2
Photograph showing displaced splint.

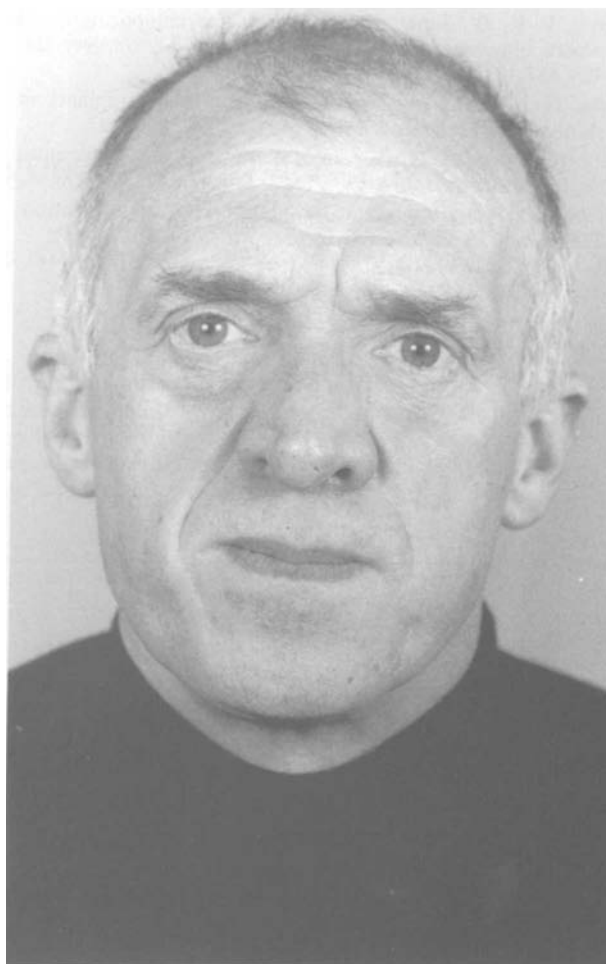


FIG. 3
Twelve months after revision augmentation rhinoplasty

which forms a fibrous capsule (Brown *et al.*, 1979; Silver and Mass, 1994) around it without tissue ingrowth. There is also a mild inflammatory response (Adams and Feuerstein, 1984). The fibrous capsule when well-formed helps secure the implant in place although this may be facilitated by securing them with sutures. Some implants incorporate Dacron or Teflon mesh which prevents them from being easily displaced. Despite these innovations Silastic® implants have a high extrusion rate of approximately 30 per cent which is gradually dampening enthusiasm for general use. Extrusion rates for dorsal and columella splints are quoted at 10 per cent and 50 per cent respectively (Davis and Jones, 1971). Superficially-placed implants are prone to trauma, mobilization and extrusion.

Milward (1972) advises that the implant be buried as deeply as possible to ensure maximal survival of implants. He also suggests that the incisions should not be made in the line of thrust of the implant.

Silastic® does have significant advantages over other implants. It can easily be refashioned by the surgeon at the time of surgery. It is also readily available. The lack of tissue ingrowth explains why the prosthesis can be relatively easily removed during revision surgery. The Silastic® implant is easy to sterilize and is therefore less likely to get infected than other synthetic implants, however, care should be taken to prevent bacterial and chemical contamination. Other prostheses in use include metals and alloys, ceramics and polymeric materials. Apart from the above-mentioned reasons we have used Silastic® implants in the nose to repair gross saddle nose deformity

for many years with good results and very few adverse effects. Autogenic materials such as cartilage and bone tend to undergo an unpredictable degree of remodelling and resorption (Mass *et al.*, 1998). Homograft carry the additional risk of disease transmission.

The mid-collumella incision used for the primary procedure may have contributed to the implant being displaced although the length of time over which the complication occurred makes it very unlikely. Trauma should still be considered as the most probable cause of displacement. We opted for the intercartilaginous incision for revision surgery in order to reduce the chances of recurrence.

Despite all these measures complications do occur but usually in the first two years following surgery (Davis and Jones, 1971). The splint in this case was spontaneously displaced five years following surgery which is most unusual and has not been reported in the English literature. This has implications for the appropriate length of review following surgery.

References

- Adams, B. J. S., Feuerstein, S. S. (1984) Looking under the epidermis: A histologic study of implants. *Plastic and Reconstructive Surgery of the Head and Neck*. C.V. Mosby, St Louis, p 148.
- Brown, B. L., Neel, B. H., Kern, E. B. (1979) Implants of supramid, proplast, plastipore and silastic. *Archives of Otolaryngology* **105**: 605–609.

- Davis, P. K. B., Jones, S. M. (1971) The complications of silastic implants. *British Journal of Plastic Surgery* **24**: 405–411.
- Mass, C. S., Monhian, N., Shah, S. B. (1998) Implants in rhinoplasty. *Facial and Plastic Surgery* **13**: 279–290.
- Milward, T. M. (1972) The fate of silastic and vitrathene nasal implants. *British Journal of Plastic Surgery* **25**: 276–278.
- Safian, J. (1966) Progress in nasal and chin augmentation. *Plastic and Reconstructive Surgery* **37**: 446–452.
- Silver, F. H., Mass, C. S. (1994) Biology of synthetic facial implant materials. *Facial Plastic Surgery Clinics of North America* **2**: 241–253.

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