Bleeding Complications with Pharyngeal Flap Construction in Humans Following Teflon Pharyngoplasty

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Introduction

Teflon injection pharyngoplasty has proved to be a useful procedure in the treatment of selected cases of velopharyngeal insufficiency. It can also be used as supplemental treatment in patients in whom an unsuccessful pharyngeal flap has been performed. In 1970, we published a study in canines that showed injection of teflon into the posterior pharyngeal wall would not preclude the construction of a posterior pharyngeal flap, if this procedure was later felt to be necessary (7).

This report documents the complications that were encountered in two human cases, in whom pharyngeal flaps were constructed following teflon pharyngoplasties.

Case Reports

Case 1: A 10-year old boy entered the hospital for an elective pharyngeal flap procedure in October, 1972. His cleft palate had been repaired at an early age. Severe velopharyngeal insufficiency was only partially improved by two teflon pharyngoplasties performed three years and two years prior to this admission. The patient was anesthetized with general anesthesia using an oral endotracheal tube. A superiorly based pharyngeal flap was designed using a method similar to that described by Owsley and Hogan (3, 6). The operation was uneventful except that the posterior pharyngeal wall could not be primarily closed due to scarring in this area. Some oozing from this site was noted during the procedure, but this did not prove troublesome. The operative time was less than one hour. Profuse hemorrhage was noted from the posterior pharyngeal wall following the operation but prior to extubation of the patient. Attempts to control this by suture ligatures, topical vasoconstrictive drugs, electocautery, and pressure proved unsuccessful. The severity of the hemorrhage was intense and a tracheostomy was performed to permit packing of the posterior pharyngeal wall area for 48 hours. At this time, the packing was removed without anesthesia and with no recurrence of the bleeding. A complete hematology workup did not reveal any abnormalities. The patient had an

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uneventful postoperative course, and was discharged from the hospital seven days following his surgery with a good result. A small fistula was noted in the midline at the junction of the hard and soft palate, which may be closed at a later date.

Case 2: A 19-year old man entered the hospital in October, 1973 for an elective pharyngeal flap operation. Velopharyngeal insufficiency secondary to a poorly functioning soft palate followed a palatoplasty done in his early youth. A teflon pharyngoplasty had been performed 17 months and 5 months prior to this admission with some improvement in speech, but with the patient still complaining of regurgitation of liquids. The operation was performed under general anesthesia, using a superiorly based pharyngeal flap in a method similar to that suggested by Owsley and Hogan (3, 6). At the time of the surgery, the posterior pharyngeal wall donor site was sutured without difficulty; and no bleeding was noted. The entire operative time was less than one hour, and the patient was extubated. While he was still on the operating table, profuse hemorrhage ensued. Attempts at reintubation of the patient were unsuccessful, and a tracheostomy was required to provide an airway. With the patient reanesthetized, careful observation of the posterior wall area failed to demonstrate any individual bleeding points and the bleeding ceased without any specific intervention from the surgeon. The tracheostomy tube was removed in 48 hours and the patient was discharged from the hospital seven days following his surgery with a good result and with no sequelae.

Discussion

The use of teflon pharyngoplasty as a primary or adjunctive procedure in the treatment of velopharyngeal insufficiency in selective cases has been well documented (2, 4, 8, 9). Two patients of the last 36 that we have treated with teflon did not receive satisfactory results. Anticipating this problem, pharyngeal flaps were constructed in canines following teflon pharyngoplasty (7). This proved successful when an interval of 2, 4, or 6 months was allowed between the teflon pharyngoplasty and the contruction of the pharyngeal flap. Musgrave constructed a pharyngeal flap in one patient in whom a previous teflon pharyngoplasty had been employed, with no complications (5).

In two patients operated upon in Providence, Rhode Island, we have had serious bleeding complications resulting from a posterior pharyngeal wall hemorrhage immediately following the construction of the superiorly based pharyngeal flap. Both patients had had teflon pharyngoplasties earlier and during the surgery, it was obvious that the posterior pharyngeal wall was significantly scarred. Histological examination of posterior pharyngeal walls in which teflon has been previously injected demonstrates a foreign body granuloma with significant fibrosis (1, 7). It would appear that vasoconstriction in this area is significantly impaired because of this reaction and interferes with the normal clotting mechanism of small

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vessels and capillaries. In one of the two cases presented, the posterior pharyngeal wall could not be primarily closed after the elevation of a superiorly based pharyngeal flap because of the degree of scarring. The primary closure of the posterior pharyngeal wall, when constructing a pharyngeal flap, more often than not tents over the defect and does not contribute to the hemiostasis of the posterior pharyngeal wall donor site. The problem in this specific type of patient appears to be more of a mechanical factor due to scarring of the posterior pharyngeal wall donor site than any other.

In both of the cases presented, a tracheostomy was necessary as a lifesaving measure. In one case, it permitted the posterior pharyngeal wall to be packed manually over an extended period of time. In the other case, it was of critical importance since the patient had already been extubated, and the hemorrhage occurred during the excitement stage as the patient was recovering from his anesthesia.

It is important to bring this experience with human subjects to the attention of those who would entertain this surgery in patients who have undergone teflon pharyngoplasty as a primary procedure. Unlike our experiences in canines previously reported, the complications in these two patients were life threatening.

Summary

The experiences in two patients who had previously had teflon pharyngoplasties performed and subsequently underwent a pharyngeal flap operation for velopharyngeal insufficiency is reported. Posterior pharyngeal wall hemorrhage at the conclusion of this procedure in both of these patients was alarming. We conclude from this experience that although teflon pharyngoplasty does not preclude subsequent construction of a pharyngeal flap, the surgeon must be prepared to deal with the real possibility of significant bleeding in these special cases.

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