Variable Esophagram Post-Endoscopic Cricopharyngeal Myotomy

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ABSTRACT

Objectives: To illustrate the variability of esophagrams on post-operative day one status post endoscopic cricopharyngeal myotomy and its dependence on closure technique.

METHODS AND MATERIALS

Institutional review board approval was obtained as per protocol for retrospective chart reviews at New York Eye and Ear Infirmary. The authors identified three patients who underwent ECPM with postoperative esophagrams representative of the findings-consistent with three different closure techniques. All patients were diagnosed with cricopharyngeal dysfunction and underwent ECPM. In patient 1 no closure was used, patient 2 had fibrin glue placed over the BPF and patient 3 had suture placed in the esophagus mucosa with the retromuscular pocket filled with fibrin glue.

RESULTS

Each technique resulted in specific findings on postoperative gastrograffin swallows. (Figure 3) This was thought to be extravasation of Gastrograffin indicating a leak. The patient was stable and kept NPO. On repeat esophagram on POD 2, the previous focus of contrast was no longer evident on a scout film, but returned after repeat ingestion of the contrast material. This was initially interpreted as a postoperative pharyngeal leak. When fibrin glue application was combined with single suture reapproximation of the mucosal incision, the esophagram demonstrated no retained contrast or pseudodiverticulum. This pattern was the most similar to esophagrams performed six weeks following myotomy when healing is complete.

CONCLUSION

For surgeons introducing ECPM to their practice, the erroneous findings of extravasation may result in increased patient morbidity and their prematurely abandoning this beneficial technique because of the false presumption that it resulted in a pharyngeal leak. Recognition of the effects of different closure techniques have on the postoperative esophagram is essential to optimizing patient care.

REFERENCES


DISCUSSION

ECPM is performed as previously described. After complete transection of the cricopharyngeus, the BPF may be addressed before oral feeding. (Figure 1) If the BPF is healthy and intact, then closure of the BPF is not required and the area can safely granulate. If the BPF is violated or thin fibrin glue was placed over the defect with no suture (Figure 4). If thick BPF the wound is left to granulate. If the BPF was thickened or exposed buccopharyngeal fascia. (Figure 5) The patient's clear diet was initiated in the absence of a pharyngeal leak as determined by the surgeon and radiologist.

RESULTS

Patient 1 underwent ECPM with no closure of the myotomy defect. On post-operative day 1 the esophagram showed retropharyngeal emphysema with extension to the visceral compartment. This patient's post-operative Gastrograffin swallow showed a focus of contrast in the thickened retropharyngeal soft tissues at C6-7. This area of contrast did not close prior to discharge. (Figure 2) The patient was stable and kept NPO. On repeat esophagram on POD 2, the previous focus of contrast was no longer evident on a scout film, but returned after repeat ingestion of the contrast material. This was a returning pattern on future swallows, then healed with this modality. It was determined that what was originally viewed as extravasation was actually interaction of the Gastrograffin with the fibrin glue, not a pharyngeal leak. This patient 3 had a single suture and fibrin glue was placed in the retromuscular pocket. On post-operative day 1 the esophagram did not fill, participating, or extravasation was noted (Figure 4). Oral feeding was begun and the patient discharged. (Figure 3) This patient was similar to those described in the five patients performed six weeks postoperatively in patients whose BPF is left to granulate. (Figure 5)

CONCLUSION

For surgeons introducing ECPM to their practice, the erroneous findings of extravasation may result in increased patient morbidity and their prematurely abandoning this beneficial technique because of the false presumption that it resulted in a pharyngeal leak. Recognition of the effects of the different closure techniques have on the postoperative esophagram is essential to optimizing patient care.

DISCUSSION

Depending on the closure technique used during ECPM the postoperative esophagram varies. The variation is due to the anatomic properties of the surgical field and closure technique. In the early cases where fibrin glue was used without suture coverage, the postoperative esophagram was incorrectly interpreted as evidence of gastropharyngeal extravasation. As a result patient 2 was continued on a clear diet and eventually discharged. The morbidity of this patient was increased, due to the delay in oral feeding and hospital discharge, according to an incorrect interpretation of the findings on her esophagram.