How I Do It

Pharyngeal Pouch Surgery: A Combined Open and Endoscopic Approach

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Pharyngeal pouches are common, particularly in the elderly population, in whom they can cause significant morbidity. The advanced age of many patients and existing comorbidities mean that in some cases neither open nor endoscopic pouch stapling is possible. We present a technique of combined open and endoscopic pharyngeal pouch surgery, which may be used when other therapeutic options are limited.

Key Words: Zenker’s diverticulum, pharynx, endoscopy.

INTRODUCTION

Pharyngeal pouches are common, particularly in the elderly population, in whom they can cause significant morbidity. The advanced age of many of the patients presenting with pharyngeal pouches means that often they have multiple comorbidities, which may render the management of their pouch more complicated. The traditional open approach pharyngeal pouch excision has now been replaced by an endoscopic approach in the majority of cases, which has been demonstrated to be both safe and effective.1–3 An open approach is, however, still indicated in selected cases.4,5 In a small number of cases, the patient’s anatomy prevents an endoscopic approach. In another group of patients, an open approach may not be possible, again due to anatomical variation or previous surgery. We report on a case in which neither an open nor endoscopic approach was possible, and describe how a solution was achieved.

CASE REPORT

An 82-year-old male presented with a 6-month history of worsening dysphagia and weight loss. He had undergone an open pharyngeal pouch excision 25 years previously and was noted to have significant kyphosis of the thoracic spine (Fig. 1).

A barium swallow showed an apparent recurrence of his pharyngeal pouch, with minimal contrast flowing onto the esophageal lumen (Fig. 2). A computed tomography scan of the thorax confirmed the presence of a large pharyngeal pouch located in the thoracic inlet, and showed no other cause for the patient’s dysphagia. To definitively exclude an esophageal malignancy, an esophagogastrosopy was performed, which again confirmed the presence of a pharyngeal pouch and detected no other abnormalities.

The diagnosis of a recurrent pharyngeal pouch was thereby confirmed. In the intervening period, the patient’s nutritional status deteriorated, with a 12-kg loss in weight from his premorbid state. This ultimately necessitated admission for nasogastric feeding support.

A decision was made to attempt endoscopic stapling of the recurrent pharyngeal pouch. At the time of the surgery, the marked kyphosis of the thoracic spine, combined with a fixed cervical lordosis, meant that an endoscopic approach was not possible. Moreover, a standard open approach was not possible due to the location of the pouch in the thoracic inlet and the previous surgery through an open approach with resulting scar tissue fixing the pouch in situ.

Following the failed attempt at endoscopic pouch stapling and after counseling the patient on the limited management options available, it was decided to use a combined open and endoscopic approach to divide the recurrent pharyngeal pouch.

TECHNIQUE

Under a general anesthetic, a skin crease incision was made on the right side of the neck at the level of the thyrohyoid membrane. The dissection continued to the thyrohyoid membrane. The superior laryngeal nerve...
and vessels were identified and preserved, and the thyrohyoid membrane divided. The lateral pharyngeal mucosa was opened at the level of the arytenoid cartilage, and stay sutures attached to the free mucosal edges. A rigid pharyngoscope was introduced to a depth of 7 cm through the pharyngotomy, and the cricopharyngeal bar identified (Fig. 3). Having identified the cricopharyngeal bar, the pharyngoscope was removed and a rigid Oxford Universal pouch esophagoscope (Roberts Surgical Healthcare Ltd., Kidderminster, United Kingdom) was introduced through the lateral pharyngotomy (Fig. 4). After examination of the pouch using a Hopkins rod, a stapling gun was inserted through the esophagoscope, and the cricopharyngeal bar was divided using two rows of staples (Fig. 5). A 10-gauge Blake’s drain was placed and the wound closed in layers. Postoperatively, the patient was not allowed any substances orally for 72 hours, at which point a contrast swallow test was performed to exclude a leak from the pharyngeal repair. A leak was not detected, and the patient made a full and uneventful recovery. Six weeks postoperatively, the patient was able to swallow normally.

**DISCUSSION**

This case highlights the difficulties that may be encountered when managing recurrent pharyngeal pouches in the elderly. In this case, the marked thoracic kyphosis prevented a standard endoscopic approach and meant that the pouch lay low, within the thoracic inlet (the thyroid prominence was palpable at the sternal notch). In addition, the patient’s previous open surgery meant that recurrent open pouch surgery was likely to have been difficult due to scar tissue, with significant risk to the recurrent laryngeal nerve and a higher chance of postoperative leak, which in turn would have resulted in mediastinal sepsis.
CONCLUSION

Using the combined open and endoscopic approach described above, endoscopic stapling of the cricopharyngeal bar was achieved. In this way, the anatomical restrictions of endoscopic stapling were avoided, while minimizing the risks of a revision open pharyngeal pouch excision. This is the first documented case in the published literature of a combined open and endoscopic approach to a pharyngeal pouch. Although the particular combination of comorbidities in this patient renders the situation highly unusual, this unique approach offers a solution to a difficult problem when few other management options exist.

BIBLIOGRAPHY