A novel surgical method of managing a high output pharyngostome

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ABSTRACT

Pharyngocutaneous fistulas following large oncological surgical resection of the upper aerodigestive tract are common and typically heal over a number of weeks. A pharyngostome is a surgically created non-healing opening into the pharynx, which is far less common and often difficult to manage.

KEYWORDS

Pharyngostome – Pharyngolaryngectomy – Fistula

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Pharyngocutaneous fistulas are commonly encountered complications after large surgical resections of the upper aerodigestive tract. Typically, these defects heal over a number of weeks but the healing process may be compromised in the presence of poor tissue quality, particularly after prior irradiation. A pharyngostome is a surgically created non-healing opening into the pharynx, which is far less common but may be difficult to manage.

Case History

We describe the case of a 63-year-old man who required a pharyngostome following the surgical treatment of a T4N0M0 hypopharyngeal squamous cell carcinoma (SCC). The patient had been treated two years prior to this presentation with radiotherapy to the neck for a laryngeal SCC. His subsequent treatment (total pharyngo-laryngo-oesophagectomy, gastric transposition and neck dissection) was complicated by major anastomotic failure at the pharyngogastric junction. The necrosed stomach was debrided and then oversewn. In order to facilitate healing and prevent a life threatening carotid blow out, the decision was made to use a pectoralis major myocutaneous flap to cover the left carotid artery and fill the massive neck defect while at the same time creating a pharyngostome for saliva.

The surgery was successful and the neck healed but the discharging pharyngostome under the patient's chin began to severely affect his quality of life. He needed to use stoma bags as a reservoir to collect saliva, which hung from his chin and required changing throughout the day. It was not possible to connect this stoma to his intra-abdominal gut other than by a further major operation such as a colonic substernal transposition procedure. This possibility was not

felt to be feasible or appropriate and the patient did not wish for further major surgery.

After a period of recovery, the patient agreed to undergo a diversion procedure where a new laterally positioned pharyngocutaneous fistula was formed by tunnelling through the pectoralis major muscle pedicle (Fig 1). A size 12 Montgomery tube was used to maintain the fistula, which therefore diverted saliva laterally and allowed closure of the central pharyngostome with a local advancement flap. The Montgomery tube was replaced subsequently with a nasopharyngeal airway, with the flange positioned intraorally. This remains in situ, ensuring patency of the fistula. Stoma bags are still required to collect excessive saliva but these lie concealed underneath clothing. The patient is delighted with the outcome of this intervention.

Discussion

Patients undergoing pharyngo-laryngo-oesophagectomy typically suffer high complication rates, in the order of 63% and as high as 89% in those requiring a gastric transposition.¹ A pharyngocutaneous fistula is the most commonly reported major complication, with persistent salivary leakage carrying its own inherent risks including infection and erosion of adjacent structures.

There are several recognised methods for closing a pharyngostome, which in itself suggests that surgical closure is often difficult. The general principle of a three-layered closure is universal.² A successful operation requires closure at the mucosal layer, intermediate layer and skin. This can be achieved with a musculocutaneous flap, most often from the pectoralis major muscle.³ However, other flaps have been described such as a sternomastoid muscle flap, deltopectoral

Figure 1 Illustration demonstrating: a) preoperative location of the problematic pharyngostome; b) postoperative closure of the pharyngostome; c) tunnelling of the Montgomery tube; and d) postoperative opening of new fistula

flap and radial forearm free flap. Irradiated patients pose a greater challenge when closing a pharyngostome owing to their impaired wound healing.⁴ The irradiation leads to chronic inflammation of the normal mucosa and capillaries, resulting in inadequately vascularised and friable tissue.

Despite this, preoperative irradiation has not been shown to increase the risk of pharyngocutaneous fistulas.⁵

Conclusions

To our knowledge, this is the first example of such an innovative surgical procedure. Through the creation of a new fistula, we have been able to close a troublesome stoma under the chin and provide the patient with a better quality of life.

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