Surgical Management of Cervical Chyloma Following Parathyroidectomy

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OBJECTIVES:
- To describe the surgical management of a rare case of cervical chyloma following parathyroid adenoma excision.

INTRODUCTION

Chylomas, or chylous lymphoceles, are rare cystic formation of the thoracic duct or its tributaries which arise as an unusual complication following open neck surgery. In the few cases of cervical chyloma reported in the literature, management has varied from watchful waiting to thoracic duct ligation. This report describes the first case of postoperative cervical chyloma following parathyroidectomy and illustrates a successful surgical treatment plan for this infrequent entity.

CASE REPORT

A 56-year-old female underwent a left inferior parathyroidectomy for a parathyroid adenoma at an outside institution. A complex dissection ensued which revealed the adenoma to be located deep to the recurrent laryngeal nerve on the left side. The adenoma was identified and removed and the patient experienced an appropriate drop in her parathyroid hormone level. Postoperatively, the patient developed a cystic central neck swelling. On needle aspiration of the cyst, the fluid was found to be consistent with chyle. Despite numerous attempts at needle decompression in addition to a low-fat diet, the chyle-filled cyst recurred. On presentation to our institution, a 3 x 3-cm cystic mass was noted inferior to the previous suprasternal incision. A noncontrast computed tomography scan of the neck demonstrated a 3.8 x 2.2-cm low density, well-defined midline mass at the level of the mid to inferior thyroid gland consistent with a chyloma (Figure 1A, B).

A surgical excision was performed using continuous nerve monitoring which revealed a well-circumscribed lesion filled with chylous fluid emanating from the previous surgical bed (Figure 2A). The cyst was removed in its entirety after its attachments were meticulously ligated (Figure 2B). Pathologic examination was consistent with a chylous lymphocele (Figure 3A, B).

Postoperatively, the patient was maintained on a medium-chain triglyceride diet for one week with no evidence of chyloma recurrence both clinically and on repeat radiographic imaging.

REFERENCES

DISCUSSION

Chylomas, or chylous lymphoceles are defined as abnormal, circumscribed collections of lymphatic fluid without a true epithelial lining and their diagnosis should be considered in any patient after neck surgery with persistent postoperative cervical swelling. We present the first reported case of cervical chyloma following parathyroid adenoma excision and describe definitive surgical management for this condition.

Described in man in 1634, the thoracic duct drains chyle and lymph from the circulation and runs from the level of the second lumbar vertebral body through the posterior mediastinum to drain most often into the junction of the left subclavian and left internal jugular vein. At this junction, the duct and its tributaries are at high risk for injury during cervical surgery, trauma or from expanding tumors. Although the duct predictably drains on the left side in the majority of patients, the termination points of the duct and its branches are highly variable and therefore, can easily be injured during routine neck surgery. When the thoracic duct is injured, two general complications may arise: chylous leaks and cervical chylomas. Chyle leaks may be associated with significant morbidity including metabolic derangements, nutritional depletion, skin flap necrosis and fistula formation. Cervical chylomas, however, generally cause less severe symptoms and include pain and compressive symptoms to adjacent cervical structures, and may spread to involve intrathoracic structures as well. As with any chylous leakage, treatment consists of either conservative management with pressure dressings, repeated aspirations and dietary management in the form of a medium-chain triglyceride diet versus surgical exploration with ligation and removal of the chyloma.

Our patient presented with a persistent left-sided neck mass after left parathyroid adenoma excision. Fine needle aspiration was consistent with parathyroid adenoma to be located deep to the recurrent laryngeal nerve on the left side. The adenoma was identified and removed and the patient experienced an appropriate drop in her parathyroid hormone level. Fine needle aspiration was consistent with a chylous lymphocele but despite conservative measures, the mass recurred. A surgical excision was performed. Pathology demonstrated a mass with no true epithelial lining but with a defined wall consisting of fibrosis and chronic inflammation (Figure 3A, B). The cyst contents consisted of brisk lymphocyte infiltration with sheets of organizing fibrin and blood (Figure 3B). Both of these findings were consistent with a chylous lymphocele. After the surgical excision, there was no further recurrence of the chyloma and the patient continues to do well in follow-up.

We demonstrate that careful re-exploration with definitive ligation and excision of postoperative chylomas is an effective cure for this difficult lesion.

CONCLUSIONS:

Cervical chyloma formation is a rare complication following open neck surgery that can be successfully treated by cyst excision and ligation of any identifiable feeding lymphatic channels.

FIGURE 1: Radiographic findings

(A) Axial computed tomography scan demonstrating a left paratracheal cystic lesion
(B) Coronal view

FIGURE 2: Intraoperative findings

(A) Intraoperative photograph demonstrating a pedunculated cystic mass arising from the previous surgical bed
(B) Well-encapsulated mass status post excision

FIGURE 3: Pathology

(A) Chyloma wall demonstrating mural fibrosis and chronic inflammation (H&E, 100x)
(B) Chyloma contents with lymphocyte infiltration and organizing fibrin and blood (400x)