

essential for reducing the mortality rate<sup>12</sup>. Medical treatment rarely restores normal calcium levels. Surgery is the definitive treatment, with a 98% cure rate and a 2.3% complication rate when performed by qualified surgeons. While waiting for elective surgery, the patient should be stabilized by intravenous infusion of 2-4 L of 0.9% saline, furosemide, calcitonin, and bisphosphonates. Hemodialysis may be required in some cases.

The reported case demonstrates the need for measuring calcium levels in patients with no remarkable history in whom renal function impairment and kidney stones are found in order to rule out an associated primary hyperparathyroidism. Metabolic changes, including hypercalcemia, should also be considered as the cause of impaired consciousness so that immediate intensive medical treatment may be started.

## References

- Fraser WD. Hyperparathyroidism. *Lancet*. 2009;374:145-58.
- Ntaios G, Savopoulos C, Chatzinikolaou A, Kaiafa G, Hatzitolios A, Karamitsos D. Parathyroid crisis as first manifestation of primary hyperparathyroidism. *Eur J Intern Med*. 2007;18:551-2.
- Marienhagen K, Due J, Hanssen TA, Svartberg J. Surviving extreme hypercalcaemia-a case report of the literature. *J Intern Med*. 2005;258:86-9.
- Fitzpatrick LA, Bilezikian JP. Acute primary hyperparathyroidism. *Am J Med*. 1987;82:275-82.
- Cao H, Lai CK, Head CS, Sercarz JA. Cystic parathyroid presenting as an apparent thyroid goiter. *Eur Arch Otorhinolaryngol*. 2008;265:1285-8.
- Halenka M, Frysak Z, Koranda P, Kucerova L. Cystic parathyroid adenoma within a multinodular goiter: a rare cause of primary hyperparathyroidism. *J Clin Ultrasound*. 2008;36:243-6.
- Wani S, Hao Z. Atypical cystic adenoma of the parathyroid gland: case report and review of literature. *Endocr Pract*. 2005;11:389-93.
- Wirowski D, Wicke C, Böhner H, Lammers BJ, Pohl P, Schwarz K, et al. Presentation of 6 cases with parathyroid cysts and discussion of the literature. *Exp Clin Endocrinol Diabetes*. 2008;116:501-6.
- Tublin ME, Pryma DA, Yim JH, Ogilvie JB, Mountz J, Bencherif B, et al. Localization of parathyroid adenomas by sonography and technetium Tc 99m sestamibi single-photon emission computed tomography before minimally invasive parathyroidectomy. Are both studies really needed? *J Ultrasound Med*. 2009;28:183-90.
- VanHouten JN, Yu N, Rimm D, Dotto J, Arnold A, Wysolmerski JJ, et al. Hypercalcemia of malignancy due to ectopic transactivation of the parathyroid hormone gene. *Clin Endocrinol Metab*. 2006;91:580-3.
- Faggiano A, Tavares LB, Tauchmanova L, Milone F, Mansueto G, Ramundo V, et al. Effect of treatment with depot somatostatin analogue octreotide on primary (PHP) in multiple endocrine neoplasia type 1 (MEN1) patients. *Clin Endocrinol*. 2008;69:756-62.
- Van den Hauwe K, Oeyen SG, Schrijvers BF, Decruyenaere JM, Buylaert WA. A 50-year-old man with severe hypercalcemia: a case report. *Acta Clin Belg*. 2009;64:442-6.

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## Cervical chylous fistula after lymphadenectomy for papillary thyroid carcinoma treated with somatostatin analogs

Fístula quílosa cervical tras linfadenectomía por carcinoma papilar de tiroides tratada con análogos de la somatostatina

To the Editor:

The occurrence of a chyle fistula due to injury to the thoracic duct or one of its affluents following cervical dissection and/or lymphadenectomy is an uncommon complication during surgery for thyroid carcinoma. Various treatment approaches have been described, of which surgery is reserved as the final option when all other approaches have failed. We report a chyle fistula occurring after thyroidectomy with lymphadenectomy for papillary thyroid carcinoma which was resolved with conservative management using somatostatin analogues (octreotide).

A 34-year-old female patient with an unremarkable history attended the clinic for subclinical hypothyroidism. A physical

examination revealed the presence of a hard stone nodule, approximately 2 cm in size, in the left thyroid lobe. No cervical adenopathies were palpated. Tests for thyroid hormone and anti-thyroid antibody levels were performed before surgery but showed no significant changes. An ultrasound examination showed the presence of an 11-mm nodule in the left thyroid lobe with gross calcification inside. Fine needle aspiration of the lesion revealed a papillary carcinoma of the thyroid gland. Surgery consisting of total thyroidectomy with excision of the central cervical and bilateral jugular lymph nodes was performed. The final histological study confirmed the presence of a 1.7-cm papillary thyroid carcinoma involving one of the nodes in the central compartment and one node in each jugular chain. One week after surgery, the patient reported a lump, fluctuating upon palpation, in the left cervical region. Upon puncture (fig. 1), a whitish fluid (lymph) was collected. After three fluid evacuations, one per week, combined treatment was started with a diet rich in middle-chain fatty acids plus octreotide (0.1 µg/8 hours subcutaneously), and the fistula healed in the first week of treatment.

The occurrence of a chyle fistula after cervical surgery is an uncommon complication associated with extensive dissection in the cervical region<sup>1</sup>. Chyle fistula has been reported as occurring more frequently on the left side because of the emptying of the thoracic duct into the jugulosubclavian confluent. The lesion usually goes undetected initially, and becomes evident as fluid of a milky appearance that drains in the days subsequent to surgery or by the development of a collection of fluid after drainage removal, as occurred in our case. Treatments described for managing this complication include dietary measures such as a low-fat enteral diet with middle-chain fatty acids<sup>2</sup>, which need not enter the bloodstream through the thoracic duct, or an absolute diet with total parenteral nutrition. The role of diet is currently controversial<sup>3</sup>. Other local measures, such as the instillation of different sclerosing substances, have also been reported<sup>4</sup>. Surgery, consisting of

cervicotomy and location of the origin of the thoracic duct lesion, is often unsuccessful, and more aggressive surgical measures, such as thoracic duct ligation by thoracotomy or videothoracoscopy, are not free from significant morbidity<sup>5-7</sup>. The use of somatostatin and its derivatives (octreotide) for the treatment of chylothoraxes of different etiologies has been reported. By decreasing portal flow and gastrointestinal secretions, these drugs significantly reduce lymphatic flow through the thoracic duct and also decrease fistula volume. The use of somatostatin or one of its analogues (octreotide) is an interesting option, particularly for the management of small lesions in the thoracic duct, where a decreased flow may result in spontaneous closure of the defect<sup>8</sup>.

## References

1. Gregor RT. Management of chyle fistulisation in association with neck dissection. *Otolaryngol Head Neck Surg.* 2000;122:434-9.
2. Merante Boschini I, Meduri F, Toniato A, Pagetta C, Casalide E, Rubello D, et al. Cervical lymphorrhea after nodal dissection: role of fasting based on clinical evidence. *Minerva Chir.* 2006;61:57-62.
3. Smoke A, Delege MH. Chyle leaks: consensus on management? *Nutr Clin Pract.* 2008;23:529-32.
4. Seelig MH, Klingler PJ, Oldenburg WA. Treatment of a postoperative cervical chylous lymphocele by percutaneous sclerosing with povidone-iodine. *J Vasc Surg.* 1998;27:1148-51.
5. Gunnlaugsson CB, Iannettoni MD, Yu B, Chepeha DB, Teknos TN. Management of chyle fistula utilizing thoracoscopic ligation of the thoracic duct. *ORL J Otorhinolaryngol Relat Spec.* 2004;66:148-54.
6. Kumar S, Kumar A, Pawar DK. Thoracoscopic management of thoracic duct injury: Is there a place for conservatism?. *J Postgrad Med.* 2004;50:57-9.
7. La Hei ER, Menzie SJ, Thompson JF. Right chylothorax following left radical neck dissection. *Aust N Z J Surg.* 1993;63:77-9.
8. Priego Jiménez P, Collado Guirao MV, Rojo Blanco R, Grajal Marino R, Rodríguez Velasco G, García Villanueva A. Chyle fistula in right cervical area after thyroid surgery. *Clin Transl Oncol.* 2008;10:593-6.

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Figure 1 Diagnostic puncture of a postoperative whitish (lymph) swelling characteristic of lesions of the thoracic duct or one of its affluents.