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Octreotide in the Medical Management of Chylous Fistula

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ABSTRACT

The use of Octreotide in the treatment of a chylous fistula is a novel approach and has been documented in only a few isolated cases. Octreotide reduce gastrointestinal and pancreatic secretions, decrease hepatic venous pressure, and reduce splanchnic blood flow and hence decreases the thoracic duct lymph flow .We report the case of a patient who presented to our department with swelling in left neck. Intra-op diagnosed as Papillary CA thyroid with secondaries neck. Although thoracic duct was ligated intra-op but patient developed chyle fistula. Octreotide stopped the drainage of a chylous fistula within 48 hours after it had been previously draining for 1 week.

CASE REPORT

We present here a case of a 22-year-old female who presented to our department of surgery with slowly growing neck mass in left anterior triangle. Multiple FNAC's had already been done in different hospitals all being inconclusive. Intra-op frozen section showed papillary malignancy of thyroid origin. Total thyroidectomy and MRND left side was done. A small chyle leak was recognized on table and the thoracic duct was identified and over sewn by approximating tissues surrounding it. The immediate postoperative course was unremarkable and by the 2nd post-op day the patient was tolerating a full oral diet. On postoperative day 3 a moderate quantity of milky fluid appeared from the drain site, which gradually progressed to almost 2 L/day by post-operative day 5th. Her diet was changed to a low-fat diet consisting of clear fluids and Medium chain triglycerides. The chyle output decreased to about 1.5 L/day. On post-operative day 7th subcutaneous Octreotide 100 µg three times daily was started. Within 24 hours, the chyle fistula output decreased to less than 30% (4oo ml/day). After two days without drainage, the patient was started on a full oral diet with no evidence of the chyle leak. She received a total of 8 days of Octreotide treatment before being discharged home in good condition and without any chyle leak.

Fig. No. 1 Intra-operative view of the neck mass

Fig. No. 2 Completed Total Thyroidectomy with Lt MRND

Fig. No. 3 Chyle drainage Post-op

Fig. No. 4 patient on discharge following octreotide use

DISCUSSION

Chyle fistula resulting from violation of the thoracic duct or right lymphatic duct during neck dissection is a rare complication with potentially serious morbidity. It is reported to occur in 1% to 2.5% of neck dissections,[1] but it has also been documented after penetrating neck trauma, cervical node biopsy, and cervical rib resection.[2] Chyle fistulas are significant in that they can impair nutrition, cause metabolic disturbances, compromise and delay wound healing, result in skin flap necrosis, prolong hospitalization, and produce chylothorax. Medical management is the first line of treatment and aims to diminish chyle flow. These measures include allowing adequate drainage, applying pressure dressings, serial aspirations, bed rest, and nutritional modifications.[2]

Nutrition can be provided enterally with an elemental diet supplemented with medium-chain triglycerides (MCTs) that are absorbed directly into the portal circulation, bypassing the lymphatic system. TPN is an alternative dietary modification to the use of MCTs; however, the need for a central venous line and the increased cost make TPN a second-line approach at most institutions. The indication for surgical intervention is controversial, but persistent output of more than 600 mL/day for several days despite medical therapy or extremely high output (2 L) is an appropriate indication.

Octreotide, a long-acting synthetic analogue of somatostatin, is a promising addition to the conservative medical management of chyle fistulas. Somatostain is a peptide that acts both as a neurohormone and paracrine agent. Its biologic actions are extremely diverse and include the inhibition of thyroid-stimulating hormone, growth hormone, vasoactive intestinal peptide, gastrin, motilin, insulin, glucagon, intestinal secretions, and bile flow.[3] Somatostatin's effectiveness in the context of chyle fistulas may be due to its ability to reduce gastrointestinal and pancreatic secretions, decrease hepatic venous pressure, and reduce splanchnic blood flow.[3] It has been demonstrated to decrease the thoracic duct lymph flow rate and the ratio of triglycerides in the lymph to that in serum in dogs.[4] Among its other pharmacologic uses, Octreotide is effective in neuroendocrine tumor hyper function, pituitary tumors, pancreatic fistulas, and high output enterostomies.

The major documented complication of long-term Octreotide treatment is the increased incidence of gallstones secondary to decreased bile production and gallbladder contractility. The less dramatic side effects include abdominal discomfort and decreased fat absorption.[5] However case reports have documented its efficacy in treatment of chylothorax.[6] For all of these patients, there was a marked decrease in chyle production within 24 hours of starting therapy and no observed side effects. This permitted the resumption of a regular oral diet within days of instituting Octreotide treatment. The rapid response and minimal side effect profile make Octreotide an attractive addition to the medical management of a chyle fistula. Earlier institution of Octreotide therapy may reduce expenses incurred and patient morbidity. Further studies need to validate this observation and surgical intervention may still be required if persistent drainage continues to be high.

CONCLUSION

Octreotide is a novel drug for the management of chylous fistula. Octreotide can be added when other conservative methods are inadequate. There is no evidence in the medical literature to confirm the effectiveness of octreotide. However, in light of the inherent risks of surgery, we believe that initial conservative management with octreotide should be considered in patients with chyle leak. This combined therapy can be of particular value in such patients who are at high risk for surgery.

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