Abstract

Over the last 10 year period, 354 neck dissections were performed in our department. Of the 354 patients, 11 (3.1%) developed postoperatively chyle leakage confirmed by biochemical analysis of the drain output.

All 11 patients were managed conservatively. Treatment varied according to the volume of drain output.

Patients with mean chyle leakage less than 300cc/day (7 patients) were treated with low fat diet and oral nutrition with medium chain triglycerides (MCT).

In four cases, the volume of the chyle was over 300cc/day and was adequately managed with combination of total parenteral nutrition (TPN) and somatostatin. Among them, there was a single case which on the third postoperative day, after introduction to oral feeding developed an excessive chylous drain output (3100cc) and was also treated conservatively with TPN and subcutaneous administration of somatostatin.

None of the patients required surgical intervention. In all patients the amount of chyle decreased after the first day of somatostatine implementation and was resolved successfully in the next three to six days respectively to the amount.

Conservative management based on the volume of chyle output by means of either combination of low fat diet and MCT oral intake or combination TPN and somatostatine may be an efficient treatment in patients with chyle fistulas.

Methods and Materials

In a 10 year period of time (2002-2012), 354 neck dissections were performed in our ENT department. Of these 354 patients, 11 (3.1%) developed a postoperative chyle leakage.

All cases were confirmed on the basis of biochemical analysis and microscopic examination of the drain fluid. Fluid containing >100mg/dl of triglycerides was considered indicative of chyle leak. Furthermore, a lymphocyte count of >50% was taken into consideration as it may also reflect presence of chyle in the drainage. All 11 patients were managed conservatively. Two different treatment protocols were adopted depending on the drain output volume. Patients with mean chyle leakage volume less than 300cc/day (7 patients) were treated by means of Medium Chain Triglycerides (MCT) incorporated into a Low Fat Oral Diet (LFOD). Other practical measures included pressure dressing and bed rest, all utilised simultaneously.

There were four cases, in which the chyle volume exceeded 300cc/day and were managed successfully with the introduction of parallel administration of Total Parenteral Nutrition (TPN) and Subcutaneous Somatostatin (SS). Remarkably, there was a single case among them which developed an excessive chylous drain output (3100cc) on the third postoperative day, after introduction to oral feeding and was also treated in a conservative manner with TPN and subcutaneous administration of somatostatin (Chart 1).

Results

None of the patients required further surgical intervention. Regarding the first group (MCT and LFOD combination) all chyle fistulas resolved uneventfully within few days after treatment introduction (average 3.85 days). In all patients of the second group (TPN and SS) the amount of chyle decreased after the first day of somatostatine implementation and was resolved successfully in the next four to six days (average 5.25 days) respectively to the amount.

Discussion

The reported incidence in the literature ranges between 0.5 to 2.5% with a proportional increase, according to the type of surgery performed, reaching up to 5.1%-6.2% for thyroid surgery (total thyroidectomy with ipsilateral or bilateral neck dissection, respectively). The most predominant site of thoracic duct injury occurrence is the left side.2,3

Despite the fact that currently there is no prevalent consensus on the optimal approach required, with conservative and surgical treatment options still remaining a subject of debate in literature reviews2,5-4, the majority of publications conclude in the recognition of the valuable role of conservative management as a first-line treatment choice postoperatively, since it may allow a cure rate from 58-100%.5

Conservative management consists of several actions including adequate drainage (open, closed or negative pressure drainage)6, pressure dressing application, bed rest and nutritional adaptation.9-11 Dietary measures include the introduction of medium-chain triglycerides (MCT), because of their ability to bypass lymphatic circulation, alongside with elemental diet deprived of long-chain triglycerides6,7,12. Provided that failure occurs, a total parenteral nutrition (TPN) is recommended 5-7,12. Conservative treatment should not exceed 30 days. In addition, medical decision criteria between conservative options and surgical re-intervention and the optimal time frame of application remain controversial with many authors suggesting surgery after a persistent drainage output of >600dm/day for 5-7 days despite conservative measures or an extremely high output (>1.5-2 liters)3,7,10,12. Finally, somatostatin and its long-acting analog octreotide are described in several reports as an adjunctive therapy to usual dietary modifications increasing the success of standalone conservative management 8,13-15.

Conclusions

Chylous leakage is a troublesome, yet controllable complication of neck surgery leading to wound heal impairment and prolonged patient hospitalisation. In such occurrence, early diagnosis and treatment should be carried out according to the clinical symptoms, patient’s nutritional status and flap condition at the time of chylous leak occurrence.

Conservative management based on the volume of chyle output by means of either combination of low fat diet and MCT oral intake or combination TPN and somatostatine may be an efficient treatment in patients with chyle fistulas.

Contact

Felekis Dimitrios MD, PhD
General Hospital of Athens “G. Gennimatas” ENT Department
Email: defelba@yahoo.com
Phone: +30 6945163630

Papakostas Sotiris, MD
General Hospital of Athens “G. Gennimatas” ENT Department
Email: papisothmail.com
Website: http://www.gna-gennimatas.gr
Phone: 30 693392332

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