

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Vascular Diseases Quiz – Case 19

A 72-year-old female patient with a medical history of arterial hypertension and smoking was referred to our department from a cardiologist due to absence of left radial and ulnar arteries pulses. On clinical examination, there were no pulses in the left radial and ulnar artery and there was a difference of 100 mmHg in arterial pressure between upper extremities. Furthermore, the patient was complaining for dizziness whenever she was exercising her left arm, indicating subclavian artery steal syndrome. Patient underwent a digital subtraction arteriography (fig. 1) that demonstrated an occlusion of left subclavian artery origin. The occlusion was treated with a short carotid-subclavian by-pass using an ePTFE 7 mm graft (fig. 2) through a supraclavicular incision. Postoperatively, there were pulses on left radial artery and dizziness during exercise disappeared, but patient drained 600 mL serohemorrhagic fluid from the drain that became creamy next day.

**Quiz #1:** What is the possible cause of this complication?

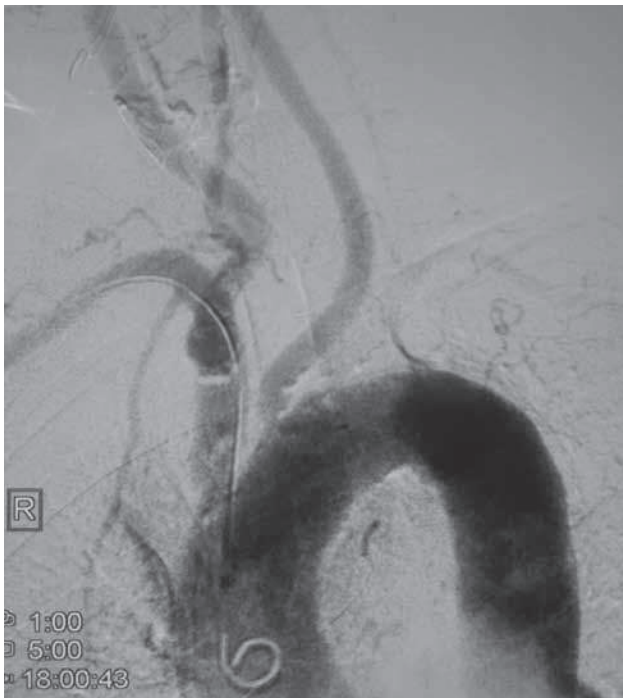


Figure 1

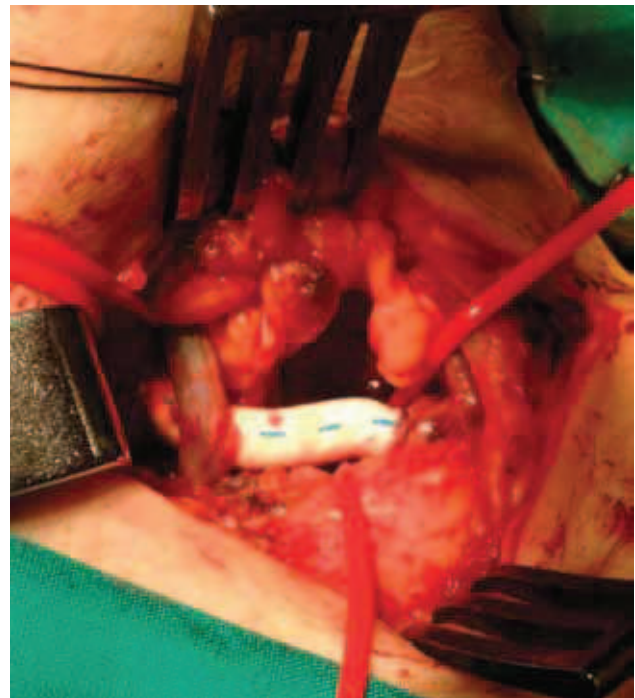


Figure 2

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2012, 29(4);514–515

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#### Comment

*Chylous fistula is a rare complication affecting 1–2.5% of head-and-neck operations. Lymphatic production is 2–4 liters per day with the majority passing through the thoracic duct. Thoracic duct originates at the cistern chyli and drains in the junction of left subclavian vein and left internal jugular vein, although many alterations have been described.*

*Lymphatic fluid (chyle) contains protein, chylomicron, electrolytes and white blood cells as well. Lymphatic production varies according to diet, intestinal function, intra-abdominal pressure and mobility*

of the patient.

Chyle leakage, post head-and-neck surgery, may occur due to thoracic duct injury. In cases that leakage is recognized intra-operatively, it should be treated with ligation and oversewing of the bed of the thoracic duct and a flap, e.g., pectoralis or the clavicular head of the sternocleidomastoid, can be used to cover the bed of the thoracic duct.

However, in many cases chyle leakage is recognized postoperatively. It presents with high drain output of a white, creamy fluid. Diagnosis is confirmed by measuring concentration of triglycerides in the fluid. If it is >100 mg/dL or if triglyceride concentration in fluid is greater than that in serum, chyle leakage is diagnosed.

Management of chyle leakage may be either conservative, or surgical. Conservative treatment includes bed rest, medium-chain triglycerides diet or parenteral nutrition if diet fails, administration of somatostatin and orlistat. If conservative treatment is unsuccessful, exploration of the wound should be performed in order to recognize and ligate the leak site. Electrolytes and proteins should be monitored closely because severe malnutrition, as well as electrolytes disorders can happen because of the chyle leakage.

In this case, patient was put on a medium-chain triglyceride diet

and bed rest. Somatostatin was also administered. Chyle leakage was minimized gradually and the patient was discharged on 6th postoperative day.

In conclusion, chyle leakage is a rare but serious complication of head-and-neck surgery. Careful planning of the operation and identification of thoracic duct are necessary in order to avoid chyle leakage.

## References

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2. SMOKE A, DELEGGE MH. Chyle leaks: Consensus on management? *Nutr Clin Pract* 2008, 23:529–532

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