

## Salivoma after carotid endarterectomy

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### ABSTRACT

Salivoma is an extremely rare pathology after carotid artery surgery. The presence of a high amylase level (85 U/L) in the drainage fluid is pathognomonic for the diagnosis. Reducing glandular secretion by anticholinergic drugs is quite useful for the treatment of salivoma.

**Keywords:** Anticholinergics; carotid artery surgery; salivoma.

Carotid artery surgery is frequently performed in our country. Therefore, most surgeons can recognize and treat postoperative complications in the early term. One of the most tedious postoperative complications is leakage and collection of fluid from the wound or drain site.<sup>[1]</sup> Treatment of fluid discharge can be quite variable. Lymphatic leakage lasts quite long and some patients may even require total parenteral hyperalimentation, while persistent cases may require use of somatostatin or analogues (octreotide).<sup>[2]</sup> Another complication following carotid artery surgery is salivoma, which may be confused with lymphatic leakage but requires entirely different treatment.<sup>[3]</sup> Salivoma is swelling formed from collection of salivary gland secretion around the wound site. In this article, we present a case of ongoing salivary fluid drainage that was detected early before development of salivoma.

### CASE REPORT

A 74-year-old male patient with transient ischemic attacks and severe left internal carotid artery stenosis (>90%) was admitted to our clinic. Radiologic assessment showed high bifurcation. Carotid endarterectomy and saphenous vein patch plasty operation was performed on the patient, who

awoke in the early term without motor deficit and was extubated. The patient was transferred to the ward in the early term and was switched to oral feeding after the sixth hour. Abundant serous drainage began to flow from the patient's drain on postoperative day one (Figure 1). The serohemorrhagic drainage in the early term later became completely serous. The drainage fluid that did not resemble lymphatic fluid was analyzed. Amylase value of 85 U/L led to the decision that it was salivary gland fluid. The patient was initiated 3×20 mg oral anticholinergic



**Figure 1.** After carotid endarterectomy, yellow-colored drainage should suggest salivary gland secretion.

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Hyoscine-N-butyl (BuscopanZentiva Health Products, Istanbul, Turkey). The patient's salivary gland functions were reduced and drainage rapidly decreased. Drainage completely stopped after three days and the drain was removed. The patient was discharged on postoperative day six.

## DISCUSSION

Leakage from incision or drain site after carotid endarterectomy is quite troublesome. Whether or not the fluid is due to infection, bleeding, lymphatic or salivary secretion must be elucidated. Infection is the first question to come to mind especially after patch procedures using synthetic materials.

Lymphatic and salivary gland fluids are particularly related to meals. Fluid discharge during meals generally indicate extraglandular salivary gland secretion, while discharge after meals usually implies lymphatic discharge. Although not always, the color of the lymphatic fluid is mostly milky colored, while salivary fluid is yellow. Amylase is measured in drainage fluid in the pathognomic test to differentiate between lymphatic fluid and extraglandular salivary secretion. Salivary gland discharge should definitely be considered in fluid with high amylase levels. Since drains are usually removed in the early period after carotid surgery, fluid collection may occur in or around the incision site and may resemble a mass known as salivoma. As salivoma size increases, discharge begins and continues to leak from the wound site. Bashir et al.<sup>[3]</sup> reported that they revised the incision and placed a drain due to excessive discharge on the second postoperative day. The same report stated that discharge stopped after inhibiting saliva discharge by administering scopolamine. Since scopolamine is not found in all parts of our country, our patient was administered 3×20 mg oral anticholinergic Hyoscine-N-butyl. Since our patient's drain was not removed, drain fluid appearance was noticed early before formation of salivoma.

Salivoma forms as a result of salivary gland injury. Large and unnecessary dissections should be avoided. In patients with high bifurcation anatomy, retractor pressure may injure the parotid gland resulting in saliva collection in the wound site. Similar to the case presented by Bashir et al.,<sup>[3]</sup> our patient also had high bifurcation.

Enlarging neck mass following carotid surgery is an especially threatening complication. False aneurysm, hematoma, and lymphatic discharge are the first causes to come to mind. This article presented a case of extraglandular salivary gland secretion in addition to these causes. In order to prevent complications of salivoma, dissection must be carefully performed around the parotid and submandibular glands and drains should be withdrawn after the patient has started adequate oral feeding. In the reoperation of patients with persistent drainage or salivoma, drain placement as well as repair of injured salivary glands should be addressed.

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