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Orocutaneous Fistula in Modified Schobinger Neck Incision—Case Report

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Abstract

Orocutaneous fistula is not an uncommon complication of neck dissection. It has been stated to have an incidence of 13.5–29% in local or regional flap. It can be a serious complication due to delay in wound healing, prolonged dependence on nasogastric tube and sometimes carotid sheath rupture. Many approaches have been proposed in the management of oro-cutaneous fistula and surgery was almost always advocated. Here we present a case of squamous cell carcinoma (SCC) of the tongue that underwent an operation of partial glossotomy and modified radical neck dissection that developed oro-cutaneous fistula postoperatively. We managed the case by conservative approach that had shown great success.

Keywords: Orocutaneous fistula, neck incision, squamous cell, radical neck dissection

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INTRODUCTION

One of the most important prognostic factors in squamous cell carcinoma (SCC) of the head and neck is the status of cervical lymph nodes. The overall survival rate decreases by approximately 50% in patient with metastases to the cervical lymph node [1].

Due to this fact it has been of extreme importance to manage the cervical lymph nodes to greatly improve the prognosis of SCC. This led to the introduction of radical neck dissection by Creil in the early 20th century [2]. Although this procedure was very useful but had increasing rate of complications and morbidity [3].

Radical neck dissection has been modified by Suarez with the introduction of functional neck dissection in which all the lymph nodes were removed with preservation of vital structures such as the internal jugular vein, sternocleidomastoid muscle and accessory nerve [4].

Modified radical neck dissection (MRND) is often ontologically equivalent to radical neck dissection but with a significant reduction in postoperative morbidity, gradually replacing radical neck dissection in the treatment of neck

for many patients with SCC of the oral cavity [5].

Many surgeons faced minor and major complications, which are frequent and can be very frustrating when performing these procedures. These complications include hemorrhage, nerve palsy (marginal mandibular and accessory), seroma, chyle leakage and wound dehiscence [6].

Postoperative complications although might not be too worrying but their management can consume time and can be very expensive. The most predictive factors in occurrence of postoperative complications were found to be preoperative radiation or chemotherapy and the type of neck dissection to be chosen [7]. Here we present a case of SCC of the tongue that was operated for hemiglossectomy, mandibulectomy with functional neck dissection using modified Schobinger incision that suffered wound dehiscence postoperatively.

CASE SUMMARY

A 60-year-old male from southern Sudan, was presented to the Oral and Maxillofacial Surgery Department in Khartoum Teaching Hospital, Sudan. Complaining from a swelling on the buccal mucosa associated with

headaches, earache and mobility of wisdom tooth which was extracted two weeks before his presentation.

Extra-oral examination revealed a 2*1 cm firm tender swelling on the right side of the border of the mandible, which is associated with parathesia (Figure 1).

Intra-oral examination revealed an ulcerated nodular mass extending from the lower right first premolar to the retro molar area extending to the floor of the mouth and the lateral side of the tongue (but did not affect its movement). Ulcer was irregular in shape with an indurated base and fungating necrotic center, in the right side of the retromandibular area (Figure 2).

Physical examination of the neck revealed palpable, tender, fixed, ipsilateral submandibular lymph node. Past medical history showed no significance.

The patient smokes five cigarettes per day for more than 10 years. Incision biopsy was taken from the buccal mucosa which revealed a grade III invasive SCC.



Fig. 1: Extra Oral View.



Fig. 2: Intra Oral View of Lesion.

Patient was operated by hemimandibulectomy and partial glossotomy using lip splitting incision. A type III modified radical neck dissection (functional) was done using a modified Schobinger incision in which lymph nodes were removed from level I to V (Figures 3 and 4).

Immediately after recovery from general anesthesia patient developed bleeding from the oral cavity whose source was the posterior mandible from the dissected muscle of mastication. Bleeding was controlled by local pressure and transexmic acid.

Patient received all the fluids needed and growth formula and postoperative blood tests were made (CBC, serum electrolytes) which revealed hypocalcemia that warranted albumin level test that showed low albumin level.



Fig. 3: Neck Dissection After Removal of Lymph Nodes.



Fig. 4: Lymph Nodes Level I to V.

Patient received IV albumin which restored albumin back to the normal level.

On day 4, after the operation during wound dressing, saliva leakage was noticed on the submental area of the neck and lateral side of the neck due to poor oral seal (Figure 5). The saliva seeping caused gradual wound dehiscence starting from the submental area till the end of the incision that caused underlining structures to be exposed.

Oral seal closure was attempted by suturing under local anesthesia and suturing the neck margins but that proved to be fruitless and dehiscence occurred again two days later still due to saliva seepage.

Finally, we attempted to deal with the dehiscence in a different way by suturing the neck skin margin to the underlining muscle and promoting healing by secondary intention and was further promoted by applying fusiderm ointment to the margins of the incision and pressure packs using sterile gauze and a cripp bandage supported (Figures 6 and 7) and attached to the occipital area.

Dressing was made using fusiderm ointment every two days; gradual healing occurred until full healing (Figures 8–10) occurred after four months of operation.



Fig. 7: Pressure Packs by Gauze and Cripp Bandage.



Fig. 5: Dehiscence of the Wound.



Fig. 8: Healing After 1 Week.



Fig. 6: Suturing of the Skin with the Underlining Muscles.



Fig. 9: Healing After 3 Weeks.



Fig. 10: Healing After 1 Month.

Histopathology report stated that the tumor was completely excised and the surgical margins are free of neoplasm and patient was referred for radiotherapy.

DISCUSSION

Removal of lymph nodes with primary lesion remains to be a very important procedure to get the best treatment outcome. Neck dissection has evolved over the years; first was operated in 1906 by Chile in which he proposed radical neck dissection by removing all lymph nodes (level I–V) and that the removal of the internal jugular vein (IJV), sternocleidomastoid (SCM) and accessory nerve is mandatory for successful outcome [8].

But radical neck dissection had many complications including death, cutaneous fistula, carotid rupture, chylous leakage, wound necrosis and medical problems including respiratory and cardiovascular complications [7].

Until Suarez in 1950s developed the modified radical neck dissections by preserving the IJV, SCM and accessory nerve. This brought a dramatic decrease in the postoperative complications of radical neck dissection.

Another important factor that was predictive for postoperative complication of neck dissection was the incisions used to access the neck area. Schobinger incisions showed to have many advantages in that it has:

1. It gives an unobstructed vision of the anatomical landmarks and the more distal surgical elements;
2. It increases blood supply for the flap by means of recruitment of new arterial vessels from the first, second, third and fourth internal mammary perforators;
3. Should flap necrosis occur, it will not compromise the coverage of the great vessels of the neck;
4. Flap excessive mobility permits it to be used in facial areas, thus facilitating their reconstruction [9]. However, although Schobinger incision provided better exposure of the neck during dissection a higher incidence of marginal necrosis and contracture of the flap with scarring was noted especially on the trifurcation point [10]. It is also believed that necrosis was due to its sharp borders [7].

In our case we have suffered wound dehiscence due to oro-cutaneous salivary fistula; a different study stated that it has an incidence of 13.5–29% after local or regional flaps [11]. It can be very serious in that it prevents wound healing, prolonged dependence on tube feeding and can cause serious complications. A study by Upile *et al.* concluded that salivary fistula may involve the carotid sheath causing degradation by the salivary enzyme resulting in devastating carotid blowout [12]. Many have suggested ways to deal with postoperative salivary fistula after head and neck surgery; some suggested aggressive surgical intervention such as debridement of all devitalized tissues, and closure by re-elevation of previously used flaps or with additional flaps [11, 13, 14].

In the current case, the patient has responded greatly to conservative treatment by debridement, aggressive wound care and neck packing. This approach was attempted because of minimal evidence of infection or indurations of the tissues. If that was not the case, surgical intervention by using local or regional flaps would have been attempted.

We do recommend using this method in the early stages as it has been shown to have greater effect when used as early as possible and by thoroughly assessing the status of the patient and the involved tissues.

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