A Patient With a Rare Single Mandibular Localization of Non-Hodgkin B-Cell Lymphoma: Early Differential Diagnosis With Dental Lesions

To the Editor: Primary malignant lymphoma of the mandible is a rare tumor that is frequently misdiagnosed as a dental lesion, delaying treatment. We report a case of mandibular non-Hodgkin B-cell lymphoma and present the clinical and radiologic characteristics of this disease with emphasis on its differential diagnosis that need to be ruled out to avoid improper treatments that may be detrimental for the prognosis of these patients.

Because non-Hodgkin lymphoma (NHL) involving the mandible as single localization is very uncommon, its imaging findings have not been well described in the literature.[1,2] Appropriate early diagnosis is important for this lesion to avoid improper treatments. Dental lesions treatments, particularly in the absence of osteolitic lesions, are commonly performed without any cytologic and histologic examinations, hence worsening the prognosis for the diffusion of the tumor after invasive dental treatment. Single mandibular localization of NHL complicates differential diagnosis with more common dental diseases (abscess, periostitis, granuloma, periodontitis). As panoramic x-ray of the jaws is the most common and often the only radiologic examination performed for dental diseases, it is important to carefully analyze imaging signs for an immediate correct diagnosis of malignancy and appropriate therapy.[3] Our goal is to show that immediate differential diagnosis, even of probability, is possible on the basis of panoramic x-ray and clinical examination alone. In fact, in case of an incorrect clinical diagnosis, the use of inappropriate dental therapies could cause clinical worsening of local conditions, which would lead to a delayed biopsy and histologic diagnosis that is detrimental for the prognosis of these patients.

One patient affected by mandibular left body swelling and other common dental lesions came to our observation. Following a panoramic x-rays of the jaws showing signs of malignant growth of the lesion, a fine needle biopsy determined that the single mandibular lesion observed was a non-Hodgkin B-cell lymphoma.

Panoramic x-ray and CT scan images showing suggestive signs of malignancy (ie osteolysis, root resorption of the 33, destructive tooth decay with furcation and resorption on panoramic x-ray and cortical bone resorption at CT scan) are shown in Figure 1A and B.

Analyzing our case, 3 factors complicated the differential diagnosis:

(1) common association with dental-related diseases in patients with jaw's tumors for poor oral hygiene and difficulties in tooth brushing with gingival bleeding and pain;
(2) single localization of the non-Hodgkin B-cell lymphoma;
(3) normal blood tests.

In our case, the association of the neoplastic lesion with dental-related diseases in the same site could have resulted in masking neoplastic signs and symptoms; furthermore, the patient did not maintain proper oral hygiene because of gingival bleeding and pain. Secondly, in case of multiple localizations, detection of other lesions in additional districts could have warranted performing biopsies and histologic analysis in 1 or additional sites. Finally, the finding of normal hematologic results with a normal lymphocytic asset also complicated to achieve the correct diagnosis.

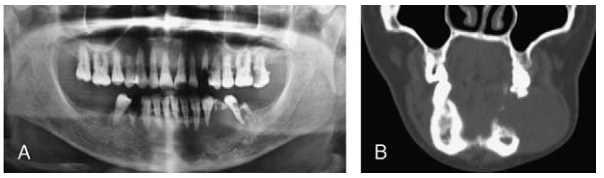

FIGURE 1. A, Panoramic image showing the area affected by the lesion with osteolysis, root resorption of the 33, destructive tooth decay with resorption of the furcation of 36. B, Mandibular tumor involvement in coronal computed tomography projection.

For all these reasons, we report that it is important investigating all the pathologic signs on the radiologic imaging, particularly on panoramic x-ray of the jaws because this is the first and often the only radiologic examination performed by dentists before initiating therapies.

Particularly, educational value resides in the panoramic x-ray (Fig. 1A) because of the simultaneous presence of multiple dental lesions of the jaws (periapical dental lesions of 14, 23, 24, 27, 36, 44, and 45 with associated caries, heavy diffuse periodontal disease) may suggest dental origin for the osteolytic lesion in the left mandibular body.

At an accurate evaluation of the panoramic x-ray image (Fig. 1A), some malignant signs of the osteolytic lesion such as indistinct borders of the bone lesion contour and root resorption of 33 and 32 can be detected indicating the need for follow-up imaging such as CT scan and a fine needle aspiration cytology for a correct diagnosis.

Educational value spurs also from Figure 1B because other malignancy signs can be detected in the CT scan image such as a large lesions volume with solid tissue density and cortical bone resorption on both the lingual and buccal sides with indistinct lower border.

Recommended examinations for accurate diagnosis of malignant jaw lesions are high-resolution CT scan and magnetic resonance imaging; however, these examinations are not currently performed for common dental disease.[4,5] High-resolution CT scan allows detecting the first signs of malignancy (cortical destruction, teeth extrusion, periodontal widening). Magnetic resonance imaging is useful in patients' follow-up to study the eventual progression of the malignant lesion in the soft tissues.

In conclusion, the main purpose of the current article is to stress the importance of an early diagnosis for malignant jaw lesions on panoramic x-ray image to ensure immediate biopsy and appropriate treatment, improving prognosis and quality of life by appropriate multidisciplinary treatments.[6,7] Imaging findings of NHL involving the mandible could be different for each case but a careful observation on panoramic x-ray images can subtly show bone involvement suggesting the clinical diagnosis of malignancy and avoiding inappropriate dental therapies that could cause detrimental delay in the diagnosis and therapy of this disease with associated worsening of the patient prognosis.

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An Easy Spreader Graft Fixation Technique by Using a Modified Speculum in Rhinoplasty

To the Editor: Described by Sheen in 1984 for the first time, spreader grafts have been used to repair internal nasal valve incompetence, maintain dorsal aesthetic lines, correct a deviated septum, and to close open roof deformities.[1,2]

Spreader grafts have become nearly a routine technique in rhinoplasty today and the optimal placement of these grafts along the septum and the ULCs is of utmost importance. Although horizontal mattress sutures are frequently used for this purpose, a number of variations involving tunneling, use of adhesives such as 2-cyano-buthyl-acrylate and different types of suture techniques have been described.[2,3] In this article, we would like to present a fixation technique using a special type of speculum in which the dorsal nasal structures are well exposed and the graft fixation is performed with greater ease.

This technique involves the use of a nasal speculum with a screw, which has been modified by 2 windows opened on its wings (Fig. 1A). Following the dissections with the open rhinoplasty surgical technique, the dorsal nasal septum and ULCs are exposed. Spreader grafts in different thicknesses and lengths are prepared according to the individual needs of the dorsum. The opened wings of the speculum are placed between the septum and the ULCs. After a fixed opening is set through the screw at the side of the speculum, the speculum is transferred to the assistant. The prepared spreader grafts are placed on the desired location on both sides of the septum. Without losing or changing the surgical position, 27 gauge dental injectors needles are inserted through the open wings of the speculum. Thus, the spreader grafts and septum are temporarily fixed for easy suturing (Fig. 1B). Using suitable materials (eg, PDS 5/0), the spreader grafts are permanently sutured to the dorsal nasal septum with horizontal mattress sutures. Finally, the ULCs are refixed to the septum and the spreader grafts and the dorsal nasal reconstruction is completed.

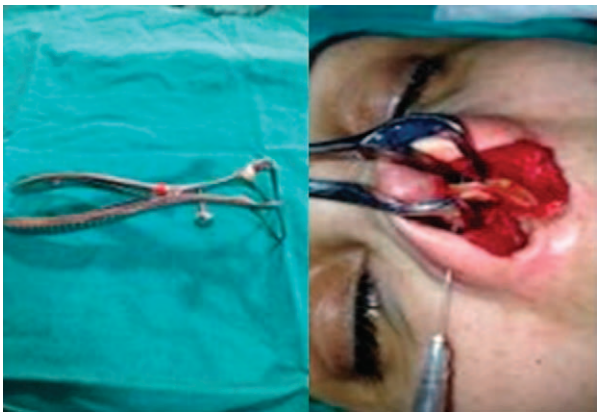

FIGURE 1. A, View of the nasal speculum with a screw, which has been modified by 2 windows opened on its wings. B, Stabilization of the spreader grafts with the aid of the modified speculum. A 27-gauge dental injector needle is inserted through the open wings of the speculum.

The application of spreader grafts, which constitutes one of the most important stages of rhinoplasty, has a major contribution to the postoperative functional and aesthetic outcome[1]; however, it is of vital importance to prepare the grafts—either individually or in combination with spreader flaps—in the ideal size and location. This may be especially challenging for younger surgeons who have recently started performing rhinoplasty. In the method we described, the modified speculum and dental needles provide a larger surgical standpoint and a wider range of movement. The ideally placed spreader grafts will therefore greatly improve the final functional and aesthetic outcome without a doubt.

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Massive Cervical Mass Being the First Sign of Esophageal Carcinoma

To the Editor: Neck masses are common signs and complaints in otolaryngology practice. Although most of the masses in the neck region are caused by inflammation, in the absence of inflammation, a neoplastic expression must be considered.[1] Although the metastasis of cervical lymph nodes primarily expresses head and neck carcinomas, distant metastasis from other origins must also be considered. In the current article, we present a unique case of cervical lymph node metastasis of esophageal squamous cell carcinoma (SCC) in which the first sign of the esophageal cancer is massive cervical mass without any other complaints.

A 57-year-old woman presented with 7-month history of a growing swelling on the right neck region. Despite a week of antibiotherapy prescribed by other physicians, the volume of the mass had continued growing. Physical examination of the neck revealed a painless, solid, nontender, huge mass in the right supraclavicular region. Computerized tomography of the neck with contrast revealed a mass in the right supraclavicular region (6×8 cm) that displaced thyroid gland to the left and invaded soft tissues of the anterior neck region (Fig. 1).

The fine needle aspiration biopsy was performed. After fine needle aspiration biopsy, a diffuse hyperemia was occurred at the biopsy region. Because the result of fine needle aspiration biopsy was nondiagnostic, an open incisional biopsy was performed. After incisional biopsy, the mass began growing rapidly, invaded subcutaneous layer and caused hyperemia and necrosis on skin in 3 weeks (Fig. 1). The histopathologic examination of the biopsy material was metastasis of malign epithelial tumor.

To evaluate the primary tumor, fluorodeoxyglucose (FDG) positron emission tomography was performed. In FDG-positron emission tomography scan, an unexpected FDG uptake was reported at the gastric cardia region. Upper gastrointestinal endoscopy revealed nodular lesions at the distal part of esophagus and protruding mass located at the gastric cardia region. Upon endoscopic biopsy of both the lesions, histologic examination of the biopsy was SCC of esophagus that had spread to the gastric cardia region and metastased to the cervical lymph node. The patient was accepted as inoperable and referred to medical oncology clinic for chemotherapy because of distant metastasis.

Esophageal cancer is the eighth most common cancers worldwide. Because of its extremely aggressive nature and poor survival rate, it is the sixth most frequent causes of death caused by cancer worldwide.[2]

The lymphatic metastases of SCC of esophagus may occur at the cervical region, mediastinum, or abdomen. A majority of the lymphatic metastasis from the upper two thirds of the esophagus tends to spread to the cervical region, and the cancer from the lower third of the esophagus spreads relatively toward abdomen.[3]

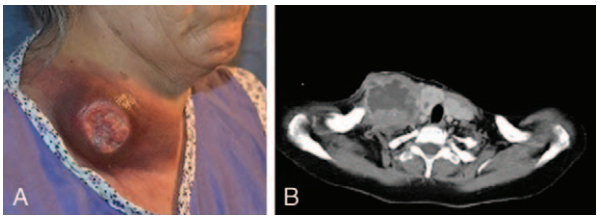

FIGURE 1. A, The appearance of the mass 3 weeks after incisional biopsy. B, Axial computed tomography with contrast showing a mass at right neck region with central necrosis and contrast uptake.

The symptoms of the disease depend on the functional disorders, local invasion, and distant metastases. The most important and frequent symptom is dysphagia. At advance stages of the cancer, odynophagia and weight loss can occur. Hematemesis, tracheoesophageal fistula, hemoptysis, and hoarseness caused by paralysis of recurrent laryngeal nerve are other symptoms of the disease.

Cervical lymph node metastases are common diseases in otolaryngology practice. Generally, the primary tumor originates from nearby organs. In our case, the cervical lymph node metastasis originated from esophageal SCC. In this unique case, the massive cervical mass was the first sign of the esophageal cancer without any other complaints. When an unexpected aggressive nature was observed at a cervical metastatic mass, the esophageal SCC must also be kept in mind in the evaluation of primary tumor.

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Obstruction of an Endotracheal Tube in Delayed Extubation After Orthognathic Surgery

To the Editor: Postoperative airway management is an important area of concern after orthognathic surgery. There is a risk for postextubation airway obstruction caused by excessive hematoma of the floor of the mouth, which leads to prolonged intubation. Placement of an endotracheal tube (ETT) does not ensure a patent airway.

A 25-year-old woman with skeletal class III malocclusion was admitted to our hospital for orthognathic surgery. After the usual induction with glycopyrrolate and propofol, a softened, lubricated, and preformed nasotracheal tube with a cuff (RAE nasal,

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Mallinckrodt, Ireland; size no. 7) was placed via the right nares. The cuff pressure was approximately 30 cm H_2O. General anesthesia was maintained with oxygen, nitrous oxide, and sevoflurane. Surgical procedures (Le Fort I + sagittal split ramus osteotomy + genioplasty) were completed. After the surgery was finished, swelling of the floor of the mouth with active bleeding was observed. A hematoma in the floor of the mouth can be sufficiently obstructive to cause respiratory distress. Thus, we decided to delay extubation. The patient was sent to the intensive care unit and was kept under careful observation at an oxygen saturation of 99% to 100%.

The next morning, 14 hours after completion of the surgery, she complained of difficulty in breathing. Chest auscultation revealed bilaterally diminished breath sounds. Cuff deflation could not improve ventilation. Her breath rate rose up to 35 to 40 bpm and her SPO_2 decreased to 89% to 93%. Her reactions to stimulation were delayed. Her mental status became deeply drowsy. Mechanical ventilation was applied, but neither her inspired nor expired tidal volume reached the volume set. The ventilator was removed. At this time, her oxygen saturation was 99.8%. Next, arterial blood gas analysis was performed, and the results showed pH 7.134 (normal 7.35–7.45), blood P_{CO_2} 71.5 mm Hg (normal 35–46 mm Hg), and PO_2 201.0 mm Hg (normal 80–100 mm Hg), which indicated respiratory acidosis. An unsuccessful attempt was made to pass a suction catheter through the lumen of the ETT and ETT obstruction was thought to be the most probable cause. The patient was placed on 100% oxygen and put under direct visualization via laryngoscopy. The ETT was removed and replaced with a size no. 7, 21-mm oral ETT. Adequate lung ventilation with normal respiratory function was obtained. Arterial blood gas results were reobtained and were found to be within normal range: pH 7.379 (7.35–7.45), blood P_{CO_2} 36.6 mm Hg (35–46 mm Hg), and PO_2 l74 mm Hg (80–100 mm Hg). Upon examining the first obstructed nasotracheal tube (Fig. 1), a blood clot approximately 12 cm in length was found obstructing 80% of the tube lumen above the cuff.

In our case, we believe that severe bleeding during the operation traveled down the trachea and through the ETT, resulting in the formation of a blood clot that blocked the lumen of the tube. Park et al[1] reported a case of blood clot impaction of a nasotracheal tube in a child undergoing alveoloplasty, which is similar to our case in that the bleeding occurred above a leak in the cuff around the ETT, resulting in clot formation.

An endotracheal cuff protects against aspiration of oral secretions, regurgitated gastric fluid, or blood into the lungs, and prevents air leakage during positive pressure ventilation[2]; however, cuff leakages have been described that result in the downward flow of regurgitated gastric contents, blood, or oral secretions into the lungs.[3] To prevent oral or pharyngeal contents from aspirating into the lungs, maintaining proper cuff pressure and using an ETT cuff of a specific material and/or design may be important. A cuff pressure of approximately 30 cm H_2O is recommended to prevent macroaspiration in airway management.[4] The longitudinal folds on the cuff surface can create channels for the leakage of oral or pharyngeal contents into the lungs.[5] Even if appropriate cuff pressure is maintained, microaspiration cannot be completely prevented. To overcome these limitations of the polyvinyl chloride cuff, cuffs made of different materials such as polyurethane[6] and Lycra[7] with different shapes, such as the tapered-shaped cuff,[8] have been manufactured and proven to have some beneficial effects.

To prevent the occurrence of severe airway obstruction caused by blood clots, more careful suction through the tube is needed. Diligent postoperative monitoring is required, especially of respiratory function. Because oxygen saturation reflects a delayed response, we obtained arterial blood gas readings when the patient was having difficulty breathing. If the ETT is partially obstructed, but the patient can still be ventilated and oxygenated, fiberoptic bronchoscopy should be performed to determine the cause of ventilation difficulty and the severity of airway obstruction.

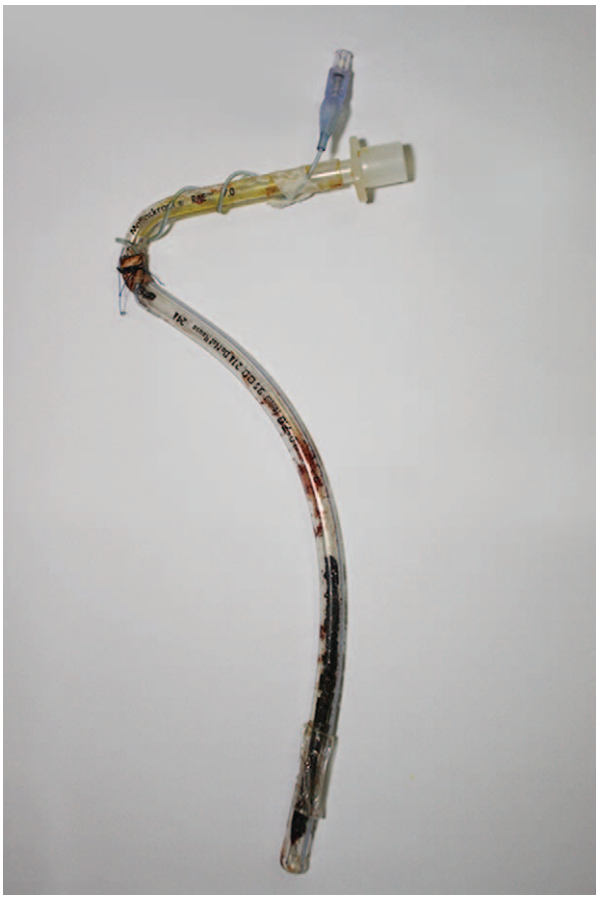

FIGURE 1. A size no. 7 endotracheal tube was occluded by a blood clot with a length of about 12 cm.

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Review of Lymphangiomatous Polyp of the Palatine Tonsil

To the Editor: Lymphangiomatous polyps (LAPs) of the palatine tonsil are uncommon benign tumors that generally arise from a pedicle attached to the surface of the palatine tonsil and project into the oropharynx.[1] Lymphangiomatous polyps of the palatine tonsil has been reported with different nomenclatures in the literature including angiomas, polypoid lymphangioma of the tonsil, hamartomatous tonsillar polyp, lymphoid polyp, or tonsillar LAP.[1,2]

A 14-year-old boy with a history of recurrent tonsillitis and severe snoring with obstructive breathing was presented to the otolaryngology clinic for evaluation of dysphagia and foreign body sensation in the throat for 4 months. He suffered from swallowing solid foods but had no trouble with fluids. He had no other local or systemic symptoms. Physical examination revealed a smooth, pale, and pedunculated mass extending from the right palatine tonsil into the oropharyngeal lumen (Fig. 1A). The pedicle was seen arising from medial surface of the hypertrophied tonsil. The rest of oral cavity, nasopharynx, and larynx were normal and there was no palpable cervical lymphadenopathy. The patient underwent bilateral tonsillectomy without complication, and the patient had a normal postoperative course. Grossly, a $1.5 \times 0.7 \times 0.5$ cm sized polypoid mass was found to be attached to the tonsil measuring $4.0 \times 2.5 \times 1.5$ cm with a slender stalk (Fig. 1B). Histologically, its surface was covered with stratified squamous epithelium (Fig. 1C) and its stroma was composed of loose fibrous tissue including numerous dilated lymphatic vascular channels (Fig. 1D).

To review all of the available English-language literature, we searched the MEDLINE database using the key words "Tonsil" and "Lymphangiomatous polyp." Since Kardon et al[1] study in 1999, we found and reviewed 7 articles in their entity that were relevant to our search.[2–8] Eight patients were identified as having a diagnosis of LAP of palatine tonsil. Table 1 provides a comparison between the 2 groups (Kardon et al data versus published articles since 1999). The characteristics of the LAP are similar to Kardon et al data, but in the case series reported since 1999, there are 2 different points. One is that there was a case that occurred in bilateral palatine tonsil and the other is that complete removal through tonsillectomy was more used than excisional in the treatment.[2–8]

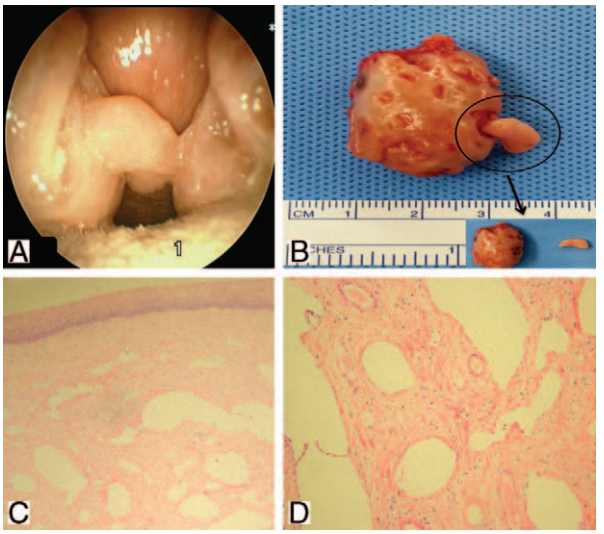

FIGURE 1. A, Endoscocpic view of bilateral tonsil; B, Surgical specimen of right palatine tonsil with polyp; C-D, Histopathologic images of a biopsy specimen (C, Hematoxylin and eosin stain × 100; D, × 400).

Lymphangiomatous polyp of the palatine tonsil usually occurs in young adults and children and does not appear to have a gender predilection.[1–8] The pathogenesis of LAP of the palatine tonsil is not clearly known, but 2 hypotheses have been proposed. In the first theory, chronic inflammation results in irreversible obstruction of the lymphatic channels with congestion, eventually leading to the formation of the polyp.[4–6] In the second theory, these tumors should be regarded as hamartomatous proliferation in tonsillar tissue rather than as a neoplasm as these elements are normally found in the tonsillar fossa but arranged in a different pattern.[1] Some authors maintain the assertion that it may be most likely responsible for the cause of these tumors.[2,7] There currently is no evidence to suspect that these lesions are anything more than an isolated and localized process.[3] Although detection of LAPs of the palatine tonsil may be incidental because the patients may be asymptomatic, common presenting symptoms include dysphagia, dyspnea, foreign body sensation, sore throat, tonsillitis, and even a sense of mass depending on the size of the mass.[1,7] The diagnosis of LAP of the palatine tonsil can be confirmed by the histopathologic findings. Histologically, LAPs are covered by squamous epithelium and its stroma consists of different components that vary from loose to dense fibrous tissue and adipose tissue, dilated lymphatic channels, and

TABLE 1. A Comparison between the 2 Groups

	David E. Kardon (1980–1999)	Published studies since 1999
M : F (Total)	13: 13 (26)	5 : 4 (9)
Age (mean, years)	3–63 (25.2)	3–49 (23.4)
Child : Adult	8 (pediatric or adolescent)	4 : 5
Site* (right : left)	Unilateral in all of the cases (not mentioned)	Unilateral: 8 cases (4: 4), Bilateral: 1 case*
Symptoms, in order of frequency	Tonsillar mass, dysphagia, sore throat	Dysphagia, foreign body sensation, painful mass, incidental finding
Grossly finding	Smooth, polypoid, measured 0.5–3.8 cm (mean 1.6)	Smooth, polypoid, pedunculated with/without stalk, 0.4–4.0 cm
Treatment*	Excisional biopsy (15) Tonsillectomy (11)	Tonsillectomy with complete surgical excision (7), simple excisional biopsy (2)

Kardon et al data versus published studies since 1999.
* Two different points in a comparison between two groups.

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various components of lymphoid tissue.[1] Lymphangiomatous polyp should be considered in the differential diagnosis of mass lesion in the tonsil including lymphangiectasia, hemangioma, arteriovenous malformation, juvenile nasopharyngeal angiofibroma, fibroepithelial polyps, and papilloma.[1,2,4] Although some authors suggest that an excision of the polypoid mass may be the only necessary procedure, most authors suggest that a tonsillectomy is the curative procedure of choice regarding the management of the LAP.[1,4,7] There have been no reported cases of disease recurrence or malignant transformation after excision.[1–8]

In conclusion, this case demonstrates that LAP must be taken into consideration in the differential diagnosis of a tonsillar mass lesion. Although this is a rare clinical and pathologic entity for pathologists and clinicians, the diagnosis is not so difficult if one has a bit of experience about that.

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Accessory Parotid Gland Fistula and Abscess

To the Editor: An accessory duct fistula and an accessory parotid gland abscess are surgical complications known to occur following parotid gland surgery[1] but have also been reported after other operations, such as rhytidectomy.[2] These cases are socially embarrassing for the patient and difficult for a surgeon to treat. The author presents a complication from draining an accessory parotid abscess and excising a cheek cyst. This is the first report of such a case. In addition, excising a cheek cyst is not a simple task and can result in a complication that is difficult to treat. Good knowledge of facial anatomy, particularly the surface anatomy of the vital structures, and the use of magnification will help prevent such rare complications.

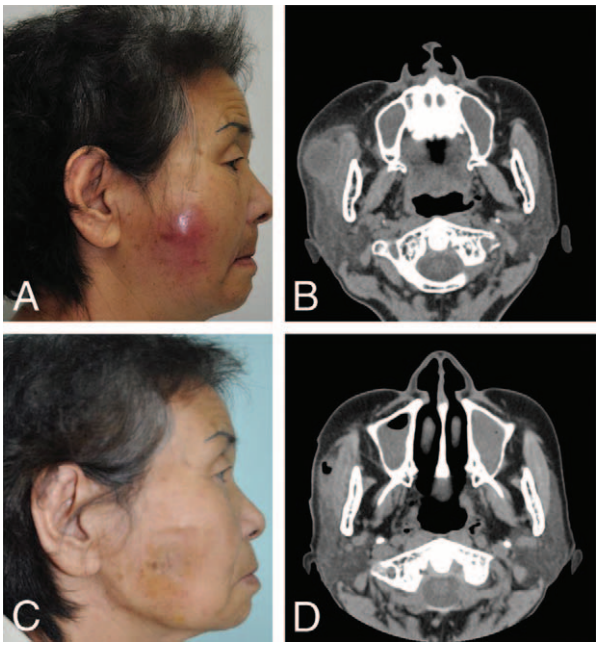

FIGURE 1. A, An 87-year-old woman suffering from mild swelling and induration of the left cheek region was observed preoperatively. B, Preoperative enhanced axial computed tomography scan shows a well-defined, ovoid, soft tissue cystic lesion ($2 \times 2 \times 1.5$ cm). C, Normalization of the cheek skin after 4 weeks. D, Postoperative enhanced axial computed tomography scan reveals a well-drained accessory parotid gland abscess.

An 87-year-old woman presented for swelling, induration, and a clear discharge from a wound site on the left check after an epidermoid cyst was drained by a general practitioner (Fig. 1A). Discharge volume increased when she ate spicy food or drank lemon juice. An examination revealed a clear fluid discharge from a small pit at the center of the wound in line with the surface anatomy of the parotid duct. The initial contrast-enhanced computed tomography (CT) scan showed a homogeneous cystic mass in the accessory parotid gland (Fig. 1B). The condition was treated conservatively with additional drainage and resolved completely in 2 weeks (Fig. 1C). A postoperative contrast-enhanced CT scan revealed a well-controlled abscess pocket (Fig. 1D).

An iatrogenic parotid duct fistula usually occurs as a complication of superficial parotidectomy,[1] but in rare cases it can complicate other surgical procedures, such as rhytidectomy.[2] When an infected epidermoid cyst or abscess lies in the vicinity of a duct, and the physician has little or no knowledge of the surface anatomy of the structures adjacent to the cyst to be excised, then the chance of damaging these structures is high, as in this case. More than 50% of parotid fistulas can be treated conservatively by restricting oral intake and using pressure dressings, as in this case, in which the fistula closed within 2 weeks.[3] Other reported modalities include botulinum toxin injection, radiation therapy, tympanic neuroectomy, total parotidectomy, and vein graft interpositioning.[4]

ACKNOWLEDGEMENT

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Using a Second-Degree Burn Supratrochlear Artery-Based Forehead Flap for Reconstruction of Deperiosted Frontal Defect

To the Editor: The forehead skin is relatively thick and has limited mobility; therefore, only small defects can be closed primarily. Skin grafting is a convenient choice in cases where the periosteum is intact. However, cases of forehead defects with exposed frontal bone with denuded periosteum generally require local flaps, free tissue transfer, tissue expanders, or distant flaps.

In this report, a forehead flap, based on the supratrochlear artery, was elevated from the second-degree burn wound without including the periosteum and was used for reconstruction of a fourth-degree burn wound.

CASE REPORT

A 38-year-old woman presented with forehead burn injury due to contact with a heated stove after epileptic seizure. On physical examination, second-degree (6×6 cm) and fourth-degree (5×6 cm) burn wounds were observed on her forehead (Fig. 1A). She also had a superficial second-degree burn wound (25×10 cm) on the right abdomen and groin. Silver sulfadiazine was applied daily for wound care. Under general anesthesia, debridement of the third-degree wound, tangential excision of the second-degree wound, and reconstruction of the resulting defect were performed on day 9. For the reconstruction of the deperiosted frontal bone defect (5×6 cm in size), the left supratrochlear artery-based forehead flap was planned from the adjacent second-degree burn wound (Fig. 1B-D). Following elevation and transposition of the flap, second-degree burn flap's deepitelized surface and the donor site were resurfaced with a split thickness skin graft harvested from the posterolateral aspect of the thigh. At the postoperative fifth day, the tie-over dressing over the graft was removed, and the graft take was optimal. The flap elevated from the second-degree burn wound and graft healed without any complications (Fig. 1E).

DISCUSSION

Reconstruction of the forehead defects is quite challenging, as the forehead is center of attention for facial aesthetics. There are various options in the literature for reconstruction of the forehead defects that range from skin grafting to complex reconstructions with microsurgical free flap transfers, but as a general rule, the simplest reconstruction method is the best every time if possible.[1,2]

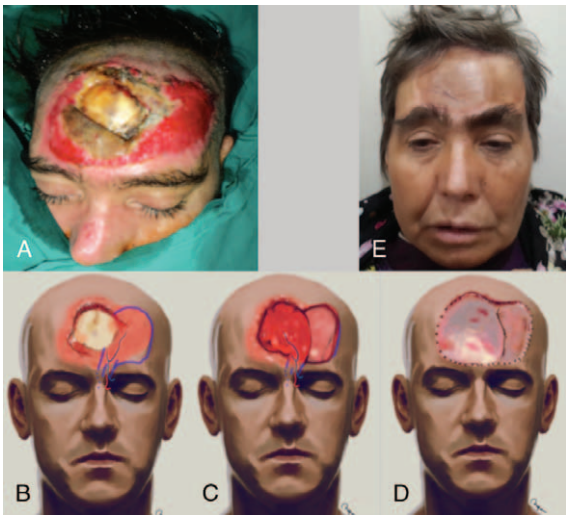

FIGURE 1. A, Preoperative appearance of the second-degree (6 x 6 cm) and fourth-degree (5×6 cm) burn wounds in the forehead resulting in deperiosted frontal bone defect. B, Schematic drawing demonstrating the pre-operative appearance of the patient. C, Schematic drawing demonstrating the flap design (Note that supratrochelar artery was preserved and the forehead flap was elevated from the burn area without including the periosteum). D, Schematic drawing demonstrating the post-operative appearance of the patient after skin graft placement. E, Postoperative appearance of the patient 3 months after reconstruction revealed aesthetically acceptable result.

Direct placement of a skin graft on bare bone puts the graft at risk for failure. There are some options to solve this problem. One method is to allow exposed bone to granulate before skin grafting, but the granulation process can be lengthy. Snow et al found that the time required for granulation of bare bone was approximately 2 weeks for every centimeter of bone width and decortication of the bone can promote granulation.[3,4] Alternatively, galeal and galeal/periosteal flaps or temporal fascia flap may have been used to facilitate granulation or to provide immediate vascular supply to an overlying skin graft.[2,3] However, if any of these methods are selected, additional incision required to elevate the flap and donor site morbidity become the major limiting factors. Forehead flaps based on supratrochlear, combined supratrochlear, and supraorbital arteries or on the frontal branch of superficial temporal artery have been used most frequently.[1] The glabella is a meeting point of various vascular structures and therefore an ideal location for a flap pedicle.

In this article, supratrochlear artery-based flap from the second-degree burn wound to reconstruct the deperiosted frontal bone defect was reported. We preferred to use this flap to cover the denuded bone, as it will already necessitate a graft reconstruction and not to lead to an extra scar formation. The main advantages of this approach are that it is relatively less time-consuming, safe, and easy surgical technique and minimal associated donor site morbidity.

As a conclusion, second-degree burn tissues can be used safely and effectively as a flap option to reconstruct full-thickness defects that require soft tissue transfer.

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Closure of Large Oronasal Fistula With a Tubed Flap

To the Editor: We report a case of a man with a large oronasal fistula, compound facial deformity, involving nasal septum, columella, and palate caused by infection following bone marrow transplantation. We used medial upper arm tube flap and autogenously costal cartilage for the reconstruction. The medial upper arm tube flap was transferred with pedicle to nasal base. After detached and folded, the flap was transferred to palate through nostril. Cartilage was harvested from the seventh rib at the right side for advanced rhinoplasty. The flap survived completely. The appearance, nasal respiratory function, and phonic function were improved and the patient was satisfied.

The large oronasal fistula remains a challenge for surgeons because of limited flap options and the characteristics of the anatomy of this site. Although some methods are available to repair nasal septum, columella, and palate separately, including skin grafts, local flaps, and free flaps, no treatment of choice does ensure an excellent texture- and color-matched tissue at the same time. And flaps cannot be transferred to the nose and palate in one stage without disfigurement. Admittedly, the inner side of the arm has first been used as a distal-based flap in 1597 by Tagliacozzi,[1] and other usages of medial upper arm flap were mentioned in some original articles, but to our knowledge, no subsequent cases to illustrate it have been used for reconstruction of an oronasal fistula, especially involving nasal septum, columella, and palate at the same time. We hereby report our recent experience.

A 31-year-old male patient presented with the complaint of oronasal fistula caused by infection following bone marrow transplantation. The area of the large oronasal fistula, measured from oral cavity was 1.8×3.2 cm and measured from nasal base was 1.7×2.6 cm. The shape of his nasal septum and columella was defected. The forepart of maxilla, incisors, and central incisors were defective too. We used medial upper arm tube flap and autogenously costal cartilage to close the defects (Fig. 1).

The flap was transferred with pedicle to the nasal base. After detached and folded, it was transferred to the palate through nostril. The end of the flap was opened and transferred, through the intraoral approach, to the defect of palate. To reconstruct the septum and columella, sagittal incisions were made in the middle of the tube flap and the corresponding area inside nasal cavity to reconstruct septum and columella. And then, the flap was incised and turned to the center to form the nasal base surface. The tube flap in nasal cavity was a triangle one. It was incised and turned to the mouth to repair the oral surface of palate. The far end of flap was sutured to the upper lip skin at the bottom of the column base. Cartilage was harvested from the seventh rib at the right side for advanced rhinoplasty. The whole operation process was smooth and successful. The flap survived completely and the cosmetic result, nasal respiratory function, and phonic function were acceptable and the patient was satisfied.

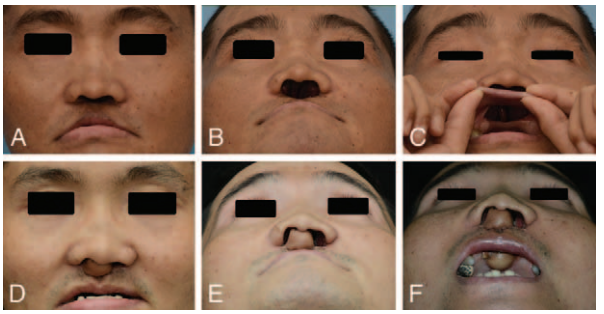

FIGURE 1. Preoperative views of the patient and the appearance of the defect: A, anterior and B-C, upward views; and postoperative result after 6 months: D, anterior and E-F, upward views.

The reconstruction of oronasal fistula is a challenge, both functionally and aesthetically, because of its complex anatomic structure and localization. The septum is responsible for providing stability and support to the nasal tip, nasal dorsum, and middle nasal third.[2] The columella provides support to the nose and overlying soft tissue envelope, projection to the tip, and serves as an important aesthetic unit of the face. Moreover, it plays a pivotal role in maintaining airway dynamics by opening the nasal valve. The relative paucity of adjacent tissue available for reconstruction, unique contour, and tenuous blood supply make it particularly difficult to reconstruct. And the palate provides a barrier between the respiratory tract and the alimentary tract, which implements the function of breathing, swallowing, and pronunciation. Thus, the tissue used for reconstruction should meet these anatomic requirements, including both cartilage and skin. Because of the localization, limited tissue directly adjacent to these areas could be used for repair,[3] and defects in these areas will often extend to the adjacent subunits of the nose, mouth, and face,[4] thus complicating the reconstruction.

Since the medial arm flap was described by Daniel in 1975[5] as a possible neurovascular free flap, it has been successfully used in the restoration of various deformities. The medial upper arm flap is superior to other local, regional, and free flaps in the soft tissue reconstruction of the head and neck because of its advantages of relatively hairless skin, perfect color and texture match for the facial skin, a constant and safe pedicle, well hidden scars in the donor area, and completion with no microsurgery. But the blood supply of the medial arm is complex and sometimes confusing.[6] Karamürsel et al[7] reported that the medial arm skin could be raised on various arterial bases including the superficial brachial artery, the direct cutaneous branch, and the superior ulnar collateral artery. By means of pedicle, the flap can be extended and reached distant defects more easily.

Combining with cartilage, the medial upper arm flap is a convenient way to construct composite tissue defects such as columella. By prefabricating various tissues such as skin, cartilage and bone according to the requirements, this method may be used for the other composite facial defects.

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Giant Cell Tumor of the Maxilla in a Teenaged Patient

To the Editor: Giant cell tumors (GCTs) of the bone are rare lesions characterized by the presence of multinucleated giant cells (osteoclast-like cells), accounting for 4% to 7% of all bone tumors.[1] They usually arise in the epiphysis of long bones and exceptionally involve the cranial facial bones or paranasal sinuses. Maximal incidence is in the third decade of life, <5% occurring in an immature skeletal system.[1] Giant cell tumors are considered benign but they can be locally destructive and, occasionally, they can be primarily malignant or undergo neoplastic transformation.[1–4] True GCTs of the maxilla are at outmost rare. Only 2% of all GCTs originate in the craniofacial skeleton and they usually involve the sphenoid, ethmoid, and temporal bones.[1–6] Herein, we present the case of a teenage girl with maxillary GCT. To the best of our knowledge, this is the first description of a GCT of the upper jaw with onset in adolescence.

A 15 years old girl was referred to our Department with a 6-month history of progressive nasal obstruction and recent onset of mouth breathing. Computed tomography evaluation showed an opaque and osteolytic, bone-expanding lesion in the anterior part of the maxilla, displaying well defined multilobulated contour, occupying both nasal cavities and extending through the maxillary sinuses (predominantly on the left) with damage of the nasal septum (Fig. 1A). A generous excisional biopsy was performed. Histology displays a tumor with several multinucleated giant cells. These cells enclosed many centrally located vesicular nuclei, and were diffusely dispersed in a vascular stroma of epithelioid or spindle-shaped cells. The stromal cells presented nuclei identical to those found in the giant cells (Fig. 1B-C). The profound slides contained bone fragments with reactive changes (Fig. 1D). Laboratory findings were within physiologic limits, serum calcium and parathormone values were also normal (parathormone = 45 pg/mL; reference = 10–69 pg/mL). Ultrasound of the neck was unremarkable, including the thyroid and parathyroid glands. Thus, hyperparathyroidism was excluded and the diagnosis of maxillary GCT was confirmed. The tumor was completely excised by the midfacial degloving approach. The macroscopic aspect consisted of a firm, brown, irregular mass.

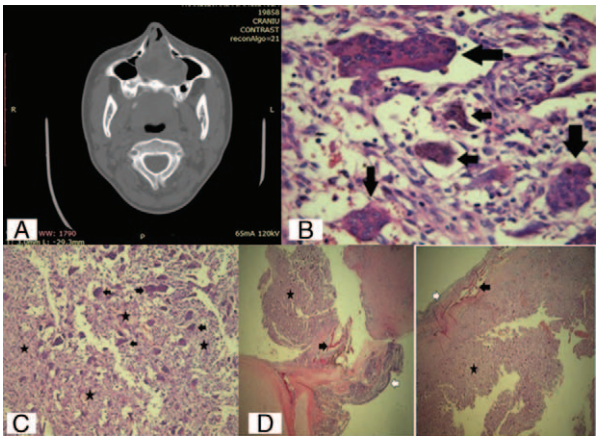

FIGURE 1. A, Computed tomography scan (axial views) showing the tumor occupying both nasal cavities and extending into the maxillary sinuses. B, The tumor is composed of a mixture mononuclear round to oval stromal cells with mitoses and no hyperchromatism (black star) and numerous giant cells (black arrows) (×100, HE). C, Giant cells (black arrow) contain between 10 and 60 nuclei with morphology similar to the nuclei of stromal cells (×400, HE). D, Tumor (black star) infiltrates the bone (black arrow) underneath the mucosa (white arrow) (×25, HE).

The symptoms of head GCT are nonspecific: depending on location, patients can present epistaxis, nasal discharge, obstruction, headache, facial pain/pressure, visual disorders, tinnitus or hearing loss, and facial deformities. Computed tomography scan displays an expanding osteolytic lesion, with a nonsclerotic sharply defined border in 80% to 85% of cases,[6] which distinguishes it from other bony tumors. It allows a thorough estimate of soft-tissue invasion and involvement of important anatomic structures such as orbit and skull base.[6,7] Fluid-fluid levels can be seldom seen but they are not specific for GCTs.[7]

On histologic examination, GCTs present a uniform scatter of giant cells found in variable number, and rounded or spindle-like stromal cells.[1] The giant cells resemble osteoclasts; they are multinucleated with 10 to 50 nuclei, centrally located, as opposed to Langerhans cells that present horseshoe shape–arranged nuclei; however, the tumors' uniqueness is represented by the particular background network of stromal cells that have nuclei identical to giant cells.[7]

Differential diagnosis includes giant cell reparative granuloma, brown tumor, cherubism, osteoblastoma, chondroblastoma, aneurysmal bone cyst (ABC), nonossifying fibroma, and osteosarcoma.[1–7] Giant cell reparative granuloma is considered more likely a reactive process that occurs in the jaws, consequent to trauma or inflammation. Different from GCTs, within the reparative granuloma, the giant cells adopt a focal distribution around areas of possible hemorrhage in a dense vascular stromal network.[8] Although brown tumors of the maxilla can be histologically indistinguishable from GCTs, they are secondary to abnormal bone metabolism caused by hyperparathyroidism.[9] Cherubism is a bilateral symmetric skeletal dysplasia limited to the mandible and maxilla. Onset is between 2 and 4 years of age, with autosomal dominant transmission and male predominance. The typical clinical and radiologic presentation makes biopsy unnecessary. Genetic analysis reveals mutations in the

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SH3BP2 gene.[10] The ABC is a benign lesion composed of blood-filled spaces separated by fine connective tissue septa containing bone or osteoid and osteoclast giant cells. They display distinct histology features from GCTs; although in some cases, GCT may show secondary ABC-like changes.[7]

Treatment of GCT is primarily surgical. In cases of extensive resection, reconstruction with autografts or metal prostheses is often used.[1–6] The overall prognosis of GCTs is good. Nevertheless, local recurrence rates vary between 0% and 65%, depending on tumor extension and treatment.[1–4] The extent of surgical excision is the only recognized prognostic factor so far.[1–6] Relapses usually occur in the first 3 years after surgery,[1–7] but long-term follow-up is compulsory because of the existence of late recurrence or metastasis.

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