plexus can provide a route for distant metastatic head and neck tumors. This valveless system extends from the skull to the sacrum and theoretically offers low resistance to tumor emboli.[7,8]

Clear cell renal carcinoma is a challenging diagnosis for the pathologist because the differential diagnosis includes benign tumors and, often, the oral lesion appears as mentioned above. The differential diagnosis of clear cell tumors in the head and neck includes neoplasms of salivary and odontogenic carcinoma. CK 8 and CK 18 markers and negative expression for CK 7 and CK 20 are usually common in RCC. Pires et al[9] showed that CD10 was expressed in all RCC patients and only focally expressed in a patient of mucoepidermoid clear cell carcinoma; it was also noted that clear cell renal carcinomas are negative to mucircamin stain. Additionally, mucoepidermoid carcinoma and clear cell renal carcinoma showed a heterogeneous profile expression of CK markers 7, 8, 13, 14, 18, and 19; their isolated use in differential diagnosis of these tumors does not seem to be useful, showing the need for associated expression of vimentin.[7] AE1/AE3 markers indicate prominent expression in mucoepidermoid carcinoma and RCC.[9] Nonetheless, another study showed that the diagnosis of metastatic RCC can be supported by a positive test for CD10 and vimentin and a negative test for gross cystic disease fluid protein, S-100, HMB-45, muscle-specific antigen, and desmin.[10]

The prognosis of metastatic renal carcinomas is poor, and most patients die 1 year after the discovery of metastasis to the head and neck. However, palliative treatments must be established for greater comfort and to increase patient survival.[11,12] Although Will et al affirm that the renal carcinoma is traditionally known as a *radio-resistant* tumor,[11,13,14] Azam et al suggested radiotherapy is effective in the treatment of metastatic disease to achieve local control or palliative conduct.[7,15] New agents, such as sorafenib, sunitinib, and tyrosine kinase, inhibitors containing antiangiogenic activity, have been approved for the treatment of RCCs. Other potential treatments are still being developed, including tumor vaccines and small molecule inhibitors.[10] Radical resection is recommended for oral-isolated metastasis to optimize the quality of life and improved survival rate before any progression of the disease[3] to control pain and to prevent bleeding and infection.[6,15] Also, the evolution of metastatic RCC in patients is poor; the mortality rate is over 90% for 5 years.[7,15]

CONCLUSION

In conclusion, oral metastasis from RCC is a rare neoplasm of the oral cavity. Presently, more than half the patients of RCC represent the first evidence of the disease, justifying the need for knowledge about its histologic and immunohistochemistry characteristics. We reinforce the importance of taking note of oral manifestations as well as explore the clinical history of patients to search for this disease that unfortunately continues to have a poor prognosis.

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OPEN

Multidisciplinary Team Treatment of Penetrating Head and Neck Trauma

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Abstract: Penetrating head and neck trauma could cause significant mortality because of many important structures located in the brain and neck. Although high-velocity penetrating brain injury is often reported, reports of low-velocity, combined head and neck

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penetrating injury are rare. Hereby, the authors present a case of an old man who had encountered a serious accident, a 29-cm iron fork penetrated into his neck, through the skull base and into brain. After treatment by multidisciplinary team, the patient was in rehabilitation. The multidisciplinary team assists rapid diagnosis and treatment of penetrating neck and head injury is the key to ensure a good outcome. Therefore, as the authors face such patients again, a multidisciplinary team is needed.

Key Words: Head and neck, multidisciplinary team, penetrating trauma

Penetrating head trauma represents about 0.4% of traumatic brain injuries[1] and results from both projectile and nonprojectile injury. Penetrating neck trauma can cause high mortality because of many important structures located in the neck.[2] Numerous low-velocity penetrating brain traumas have been reported already. Reports of low-velocity, combined head and neck penetrating injury are rare. We describe an unusual patient of penetrating trauma to the head and neck by a 29-cm agricultural iron fork. Meanwhile, some diagnosis and treatment key points are summarized from this patient.

CLINICAL REPORT

A 54-year-old man was admitted to our department by ambulance, with an iron fork being penetrated into his upper neck, through the skull base and into brain (Fig. 1A). On physical examination, the man had a Glasgow Coma Scale (GCS) score of 9, with hemiparesis on his right limbs, and right lower extremity Babinski sign positive. No active bleeding from the entry point and oral cavity was observed. The skull X-ray (Fig. 1B) and computed tomography scan (Fig. 1C) demonstrated that a foreign body penetrated from the right wall of oropharynx, upward to the left nasopharyngeal posterior wall, toward the clivus and penetrated into the intracranial space, passed through the left basal ganglia region to the left parietal lobe. Digital subtraction angiography examination showed occlusion of the right external carotid artery (Fig. 1D and E).

A multidisciplinary team was assembled to draw up a treatment plan. After general anesthesia, plastic surgeons cut off the fork tine close to the neck skin with a shear. Vascular surgeons exposed the bilateral carotid artery to control hemorrhage from the cerebral hemisphere. A large left temporoparietal flap was fashioned by neurosurgeons. The frontal lobe and temporal lobe were injury, the black metal foreign body was visualized lateral to the oculomotor nerve and trigeminal nerve and piercing the petrous bone, dura mater, and brain parenchyma (Fig. 1F). With the assistance of vascular surgeons to control the carotid arteries, the fork was slowly and carefully pulled out from the neck incision. A 29-cm fork with 15-cm intracranial segment was successfully removed. Owing to the brain tissue swelling, the bone flap was not replaced. Computed tomography scan showed mild cerebral edema after 2 days (Fig. 1G). The patient was conducted in the intensive care unit with antibiotic, antiepileptic, antiedema, and other routine cares.

At postoperative 12th day, the man discharged, with stable vital signs, normal consciousness, and a mild paresis of his right upper limb. After 24 months follow-up, his right limb has recovered to full strength nearly.

DISCUSSION

To our knowledge, this is the first patient describing a low-velocity penetrating head and neck injury with an iron fork and presents several challenges to optimize management in English literature. Multidisciplinary team is the key to save this patient.

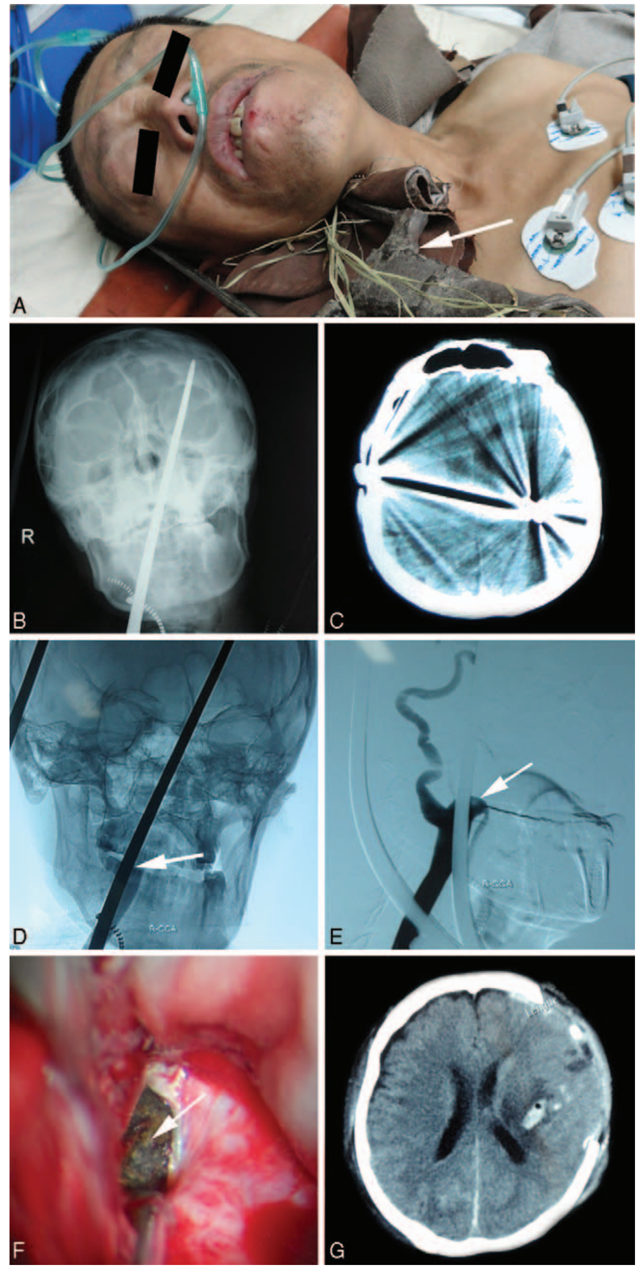

FIGURE 1. (A) Preoperative photograph showing an iron fork insert the right side of the neck (white arrow). (B) Skull x-ray. Note the metal fork inserting from the right neck to the intracranial space. (C) Brain CT. Note the agricultural fork passing through the right temporal lobe to the left basal ganglia region. (D, E) Digital subtraction angiography examination demonstrated occlusion of the right external carotid artery (white arrow). (F) Microscopic observation confirmed the metal fork pierced the brain parenchyma (white arrow). (G) Brain CT. Note the iron fork was removed, the left frontal and temporoparietal craniectomy with mild cerebral edema after operation. CT, computed tomography.

The management principles of patients with penetrating injury differ from other injures. The protruding object should be protected from movement and stabilized during transportation to prevent further injury. The principles of surgical management for this patient are safe removal of the penetrating fork first from the neck and the brain parenchyma. Extensive hemorrhage during operation is one of the most important causes of dead. Rupture of the internal or external carotid artery, venous sinus, skull, and dura may be sources for severe bleeding. The muscle and gelfoam were used to control bleeding in our patient. Digital subtraction angiography examination should be performed for the penetrating neck and head trauma to exclude vessel injury and evaluate the adjacent relationship between the foreign matter and vessels.

Cerebral edema should be special attention in penetrating brain injury. In our patient, after removing the fork from the brain parenchyma, it encountered severe acute cerebral edema. The large craniotomy and dehydration drug facilitated to control cerebral edema.

Infection is a common complication following the contamination of foreign objects, which are also associated with significant mortality. Staphylococcus aureus is the most frequently associated organism. Intravenous prophylactic broad-spectrum antibiotic therapy is recommended and the sooner the better.[3]

On the other hand, seizure is also a common complication after penetrating brain injury. About 30% to 50% of patients develop seizures after penetrating brain injury. Antiseizure medications were recommended to use to reduce the incidence of early seizures in the first week after injury.[4]

In summary, we report a low-velocity penetrating head and neck trauma, with treatment successfully. Prompt diagnosis and treatment of penetrating neck and head injuries are essential to ensure a good outcome. Our patient illustrates a complicated, multidisciplinary surgical procedure, followed by intensive medical monitoring and treatment is the key to treatment of complex diseases. Hence, when we face such patients again, a multidisciplinary team should be established.

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The Importance of Soft Triangle in Rhinoplasty

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Abstract: The soft triangle is a basic, yet delicate and vulnerable, subunit of the nose that is under-rated both academically and surgically. The soft triangle is located at the apex of the nostril, at the point where the dermis is in direct contact with dermis that contains no intervening subcutaneous tissue and it may be unintentionally harmed during rhinoplasty.

The authors suggest using a modified incision and closure and filling with significantly or severely crushed cartilage to prevent notching and to provide support for the soft triangle. The more the authors understand the nature of the soft triangle, the more they will be able to obtain superior surgical results in the nasal tip area.

Key Words: Notching, rhinoplasty, soft triangle

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The goal of rhinoplasty is to obtain an acceptably aesthetic-looking nose. To achieve that, incisions, grafts, and sutures are utilized as part of the surgical procedure. However, in doing so, a subunit of the nose that is under-rated both academically and surgically—the soft tissue triangle—may be unintentionally harmed.

The soft triangle is a basic, yet delicate and vulnerable, subunit of the nose. Converse first defined it as "an area which consists of 2 juxtaposed layers of skin, the covering of the nose and the lining vestibular skin, separated by a loose areolar layer." The soft triangle is located at the apex of the nostril, at the point where the dermis is in direct contact with dermis that contains no intervening subcutaneous tissue. It is positioned between the dome and the nostril rim, the base of the triangle forming a continuous curve from the alar rim to the lateral margin of the inferior nasal tip.[1,2]

We suggest using a modified incision and closure and significantly or severely crushed cartilage to prevent notching and to provide support for the soft triangle. The aim of this study was to describe our technique and define its place in the literature.

SURGICAL TECHNIQUE

Our approach essentially consists of 3 main steps: incision, closure, and filling. A preoperative individualized surgery plan was applied to all patients. Under general anesthesia, a midcolumellar inverted V-shaped incision was made. We united this transcolumellar incision with the infracartilaginous incision using a minor modification. Starting from the very edge of the nostril apex, we performed a slightly oblique descent as we reached the edge of the columella, and we then united the infracartilaginous and midcolumellar incisions at 2 mm posteriorly, instead of at the columellar edge. (Fig. 1B) Following the classic steps for rhinoplasty, we filled the soft triangle with significantly or severely crushed cartilage obtained from residual harvested septal cartilage, using Adson–Brown cartilage forceps (Fig. 1C). Crushing was performed with a Cottle cartilage crusher (model 523900; Karl Storz GmbH & Co, Tutlingen, Germany). Closure was performed in a slightly different manner to the classical closure; instead of sutures, we placed Surgicel on the intranasal side of the nostril apex. In this way, we avoided the notching normally caused by sutures. Final retouches for fine-tuning were applied before closure and splinting. The patient was instructed to avoid manipulation of the nose for a period of 4 weeks.

DISCUSSION

The soft triangle is a special anatomical unit of the nose. Natvig et al[3] stated that this area is "the only place in humans where skin abuts skin directly, without any intervening soft tissue". The skin is usually thinner along the alar margin and in the columella, where the configuration of alar cartilage may be visualized through a thin skin cover. The caudal edge of the domal segment is so irregular, and the cartilage itself is so delicate that great care must be taken in making infracartilaginous incisions to avoid injuring the cartilage edge or