Introduction

Dermoid cysts are benign developmental skin growths that can occur in any part of the body. Dermoid cysts of the head and neck account for 7% of all cysts, and are most frequently located near the lateral aspect of the eyebrow. They are rarely found in the oral cavity, accounting for 0.01% of all oral cavity cysts. Case Report. A 15-years-old patient was referred to our Clinic due to a growth in the mouth. Clinical examination and magnetic resonance imaging showed a clearly demarcated, oval, cystic growth in the midline sublingual region. Intraoral incision, typical for frenectomy, with cyst excision was performed. Histopathological findings suggested a dermoid cyst. Conclusion. Dermoid cysts of the oral cavity are very rare; they grow slowly and when they reach certain dimensions, they interfere with chewing, swallowing, and lead to progressive breathing difficulty. Dermoid cysts should be included in the differential diagnosis of sublingual mass. Magnetic resonance imaging contributes significantly to the decision on the surgical approach. Key words: Dermoid Cyst; Mouth; Morphological and Microscopic Findings; Magnetic Resonance Imaging; Epidemiology; Adolescent

Summary

Introduction. Dermoid cysts are benign developmental skin growths that can occur in any part of the body. Dermoid cysts of the head and neck account for 7% of all cysts, and are most frequently located near the lateral aspect of the eyebrow. They are rarely found in the oral cavity, accounting for 0.01% of all oral cavity cysts. Case Report. A 15-years-old patient was referred to our Clinic due to a growth in the mouth. Clinical examination and magnetic resonance imaging showed a clearly demarcated, oval, cystic growth in the midline sublingual region. Intraoral incision, typical for frenectomy, with cyst excision was performed. Histopathological findings suggested a dermoid cyst. Conclusion. Dermoid cysts of the oral cavity are very rare; they grow slowly and when they reach certain dimensions, they interfere with chewing, swallowing, and lead to progressive breathing difficulty. Dermoid cysts should be included in the differential diagnosis of sublingual mass. Magnetic resonance imaging provides complete information about the localization, size, and content of the growth and contributes significantly to the decision on the surgical approach. Key words: Dermoid Cyst; Mouth; Morphological and Microscopic Findings; Magnetic Resonance Imaging; Epidemiology; Adolescent

Uvod. Dermoidne ciste su razvojni benigni izraštaji, koji se mogu naći na svim delovima tela i u predelu glave i vrata su zastupljene sa 7%, sa najčešćom lokalizacijom u predelu lateralnog dela obrve. Lokalizacija u usnoj duplji je veoma retka i predstavlja 0,01% svih cista usne duplje. Prikaz slučaja. Pacijent star 15 godina upućen je zbog izraštaja u ustima. Kliničkim i magnetnorezonantnim pregledom utvrđen je cistični izraštaj ovalnog oblika u usnoj duplji, u srednjoj liniji, jasnih granica. Intraoralnom inicijom, kao za frenulektomiju, učinjena je ekstirpacija. Histopatološki nalaz je potvrdio dermoidnu cistu. Zaključak. Dermoidne ciste u regionu usne duplje su veoma retke, rastu sporo, kada dostignu značajnu dimenziju mogu dovesti do otežanog žvakanja, gutanja i disanja. Magnetna rezonacija obezbeđuje kompletnu informaciju o lokalizaciji, veći i značajno doprinosi odluci o hirurškom pristupu. Ključne reči: dermoidna cista; usna duplja; morfološki i mikroskopski nalazi; magnetna rezonanca; epidemiologija; adolescent

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These cysts are characterized by slow growth. They are most frequently found in children, in the second or third decade of life, equally in both genders, and are located in the midline [2]. These cysts may displace the tongue upwards and cause disturbances in speech, swallowing, and big cysts may cause airway obstruction. Sublingual localization is considered for cysts between the oral mucosa and geniohyoid muscles, submental most frequently between geniohyoid and mylohyoid muscles and outer between mylohyoid muscle and skin [4, 5]. The symptoms depend on the size and localization, but they frequently cause disturbances in speech and swallowing, or airway obstruction [1, 2, 5].

To confirm the clinical diagnosis and select a surgical strategy, it is necessary to perform imaging studies, ultrasound, computerized tomography or magnetic resonance imaging (MRI) [3, 6, 7].

The main therapeutical procedure is surgery, with intraoral approach for sublingual and submental cysts and external approach for cysts localized between mylohyoid muscles and skin [1, 2, 8].

Case report

A 15-year-old girl was referred to our Clinic due to a growth in the mouth, which was observed one year before. She complained of foreign body sensation and minimal disturbances in speech and swallowing. Her personal history showed a mitral valve prolapse.

Clinical examination: external inspection and palpation showed no pathological findings. During intraoral examination, intact mucosa was observed, with sublingual and submucosal growth in the midline. The body of the tongue was in the midline, motile, moderately displaced towards the palate. The mouth opening was within physiological limits. On palpation, a tumor in the body of the tongue was observed, with a diameter of 30 mm, with a soft, painless, elastic consistency. Laboratory findings were within the normal range.

The MRI of the floor of the mouth: in the midline, a clearly demarcated, oval, cystic lesion was observed, with dimensions of 31 x 29.5 x 19 mm, divided with a capsule from the surrounding muscles of the tongue, beyond the mylohyoid muscle, filled with liquid content, with homogenous hyperintense signal in T1W and T2W images. The airway was without pathological findings. On both sides, the jugular lymph node chains showed normal findings (Figure 1). After preoperative preparation, in general endotracheal anesthesia, using intraoral approach, typical for frenectomy, tumor excision was performed, with careful preparation of the lingual nerve and Wharton’s duct, saving all blood vessels of the tongue, with blunt and sharp dissection. The tumor, adherent to the surrounding muscle tissues, was entirely dissected and extirpated. Macroscopically, it was a clearly demarcated tumor, with dimensions of 30 x 30 mm, of soft, elastic consistency. Preoperatively, the patient received antibiotic therapy (Ampicillin 2,0 i.v.). The postoperative course was uneventful, and on the fourth postoperative day the patient was discharged from hospital.

The cyst wall was lined with a stratified squamous epithelium and contained mature sebaceous glands (arrow). Cystic lumen contains keratin (asterisk) (HE, x 10). The histopathological findings suggested a dermoid cyst (Figure 2). The patient was seen on regular follow-up visits, two years after surgery, having no subjective complaints and no clinical signs of recurrence.

Discussion

Dermoid cysts of the head and neck region account for 7% of all dermoid cysts. They are most frequently localized in the periorbital region [1, 3]. Other localizations are the floor of the mouth, submental or lateral submandibular region, forehead, neck and nose. The floor of the mouth is the most common localization for dermoid cysts of the mouth [1–3, 6]. Dermoid and epidermoid cysts of the mouth are rare lesions, i.e. from all dermoid cysts of the head and neck they account for 1–2%. They account for less than 0.01% of all cysts of the mouth.
Dermoid cysts of the body of the tongue are very rare and in 90% of cases are found in childhood [3, 6]. Epidermoid cysts are layered with epithelium, while dermoid cysts contain skin adnexa and hair [2, 4, 5]. The origin of dermoid cysts of the mouth is dual. They are the consequence of the embryonic developmental disorder and entrapment of epithelial cells in the time of fusion of the first and second brachial arches, in the midline in the third and fourth embryonic weeks. Furthermore, dermoid cysts may occur due to iatrogenic damage or due to trauma, with epithelial and skin adnexa inclusion [4]. Dermoid cysts are most frequently diagnosed in the second and third decades of life, with no gender predominance, in midline, encapsulated [2]. Symptoms associated with dermoid cysts are dysphagia, dysphonia and speech problems, depending on their location and size. In our case, symptoms were moderate. A broad spectrum of lesions can be considered in differential diagnosis: infections, ranula, obstruction of the submandibular duct, tumors of the sublingual and other minor salivary glands, lymphadenopathy, thyroglossal duct cysts, lymphatic malformations, epidermoid cysts, neurofibromas, hemangiomas, heterotypic gastrointestinal cysts, foregut duplication cysts [1, 4, 5, 9]. The clinical findings are not sufficient. Valuable information can be gathered by ultrasound, but MRI is most important in the identification of the cysts, establishing the relationship with muscles of the floor of the mouth, and determining the surgical approach. The MRI findings of dermoid cysts have signals of variable intensity. Cysts can be hyperintense or isointense on T1-weighted images and usually the signal is of high intensity - hyperintense on T2-weighted images [3, 5, 6]. In our case report, like in other studies, dermoid cyst had shown a high intensity signal. Fine-needle aspiration biopsy is useful in making the diagnosis, but is not necessary [5]. The therapeutic surgical approach depends on the location of the cyst, anatomic localization and relationship with muscles of the floor of the mouth. In 1925, Colp classified dermoid cysts according to their relationship with the surrounding muscles as sublingual beyond the geniohyoid muscle, geniohyoid between geniohyoid and mylohyoid muscles and lateral beneath the mylohyoid muscle [8, 9]. Surgical excision is the only effective therapy. Most of the cysts beyond the mylohyoid muscle are appropriate for intraoral surgical approach, but with big cysts and those that are beneath the mylohyoid muscle – submandibular cysts, external approach is more appropriate [1]. In our case, the cyst was removed through intraoral incision approach, typical for frenectomy with precise dissection, which enabled thorough removal of the cyst. This approach allowed successful excision without or with minimal postoperative morbidity. A combined intra- and extraoral approach is reserved for cysts large in size [5]. Postoperatively, the attention should be paid to pain, edema, bleeding, troubles with breathing and swallowing, sensibility and function of the tongue, and on the course of healing [4]. It can be found in recent literature that endoscopic approach is suitable for growths in the medial upper region of the neck [8]. Provided that meticulous, thorough extirpation of the cyst is performed, no recurrences are found [3]. Most cysts already described in literature are of the same dimensions as in our case report [2, 5, 6, 8]. Rarely, they are larger [1, 3]. Definitive diagnosis is made by histological examination of the specimen. Dermoid cysts contain keratin, caseous contents, sweat and sebaceous glands, and hair follicles [4]. Malignant transformation of these cysts in squamouscellular carcinoma is extremely rare, up to 5%, and was reported in case of sublingual dermoid cyst and in case of teratoid cyst of the floor of the mouth, after a long evolution process [3, 4, 10]. Radiation therapy is advised postoperatively.

Conclusion

Dermoid cysts in the region of the oral cavity are very rare; they are painless and grow slowly, but when they reach certain dimensions, they may disturb chewing, swallowing, and cause troubles with breathing. These cysts are benign lesions layered with epithelium which contains skin adnexa in the cyst wall. Dermoid cysts have a malignant potential. Magnetic resonance imaging provides complete information about the location, size, and content of the growth and contributes significantly to the decision about the surgical approach. Surgery is the only effective mode of therapy.

References


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