

Two Case Reports of Pleomorphic Adenoma with Magnetic Resonance Imaging Findings

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Abstract

Pleomorphic adenoma (PA) is a benign tumor seen in head and neck. It is recognized as the most common benign salivary gland tumor and it constitutes % 60 of salivary gland tumors. This slowly growing tumor usually arises from the parotid gland and is usually seen below the ear lobe and above the mandibular angle.

In our cases, patients applied to our clinic with a complaint of painless swelling on the left side of their faces. Lesions were examined by magnetic resonance imaging (MRI) method considering the possibility of a lesion related to parotid and soft tissue region. After total surgical excision of the parotid gland, histopathological examination was performed and diagnosed as PA. MRI is an important imaging modality used to determine the cause of facial swelling in patients with clinically suspected of salivary gland disease.

The purpose of these case reports are to present the details of patients diagnosed with PA in parotid glands accompanied by MRI findings.

Introduction

Salivary gland tumors are rare and they contain less than 3% of head and neck neoplasms. Pleomorphic adenoma (PA) is a benign salivary gland tumor seen in head and neck [1]. The term of PA was invented by Willis [2]. PA was described by WHO in 1972 as a circumscribed tumor characterized by its pleomorphic or mixed appearance [3]. It is recognized as the most common benign salivary gland tumor and it constitutes % 60 of salivary gland tumors [4,5]. This slow-growing tumor is mostly arising from the parotid gland. Although it occurs commonly in the major salivary glands, it may also occur in the minor salivary glands present in the oral cavity. PA is seen in parotid gland (%85), minor salivary glands (%10), submandibular glands (%5) and responsible for %60-70 of neoplasms in parotid gland [6]. Females that between the ages of 30-50 are mostly affected than males.

PA is usually solitary, round, well delimited, with a smooth and sometimes lobulated surface. It is famed for its cytomorphological and architectural versatility. Magnetic resonance imaging (MRI) findings can reflect this situation [7]. In spite of their multidirectional histopathology, all tumors share the essential diagnostic features that formation of both epithelial and myxoid tissues [8]. The rates of these components are very widely, although one or the other is often predominant. Surgical excision of the PA with wide margins is the mainstay of treatment. Conservative or inadequate enucleation or rupture of capsule can cause recurrence [9].

In these case reports, we present the details of patients diagnosed with PA in parotid glands accompanied by MRI findings.

Case Reports

Case-1

A 26-year-old female patient referred to the Oral and Maxillofacial Radiology clinic of the Atatürk University Dentistry Faculty with a chief complaint of slow growing, painless swelling on the left side of

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well defined, ovoid swelling was seen on the left side of the face. Medium hardness swelling was detected the palpation of the relevant region. The patient did not have any pain during palpation. Panoramic radiographic examination did not display any abnormality, so the jawbone lesions were excluded. Contrast-enhanced MR was performed because of the possibility that a lesion related the parotid and soft tissue region. Lesion appeared hypointense on T1 weighted MR images and appeared hyperintense on T2 weighted images. Heterogeneous enhancement, lobulated, well-defined lesion area in superficial lobe of the parotid gland was seen in the post-contrast sections after gadolinium administration. (Figure 1) The size of the lesion was measured 12.6×14×16.4 mm. Patient was directed to surgery clinic with the prediagnosis of benign parotid tumor; PA or Warthin's tumor etc. After total surgical excision of the parotid gland, histopathological examination was performed and diagnosed as PA.

Case-2

A 38-year-old female patient referred to Oral and Maxillofacial Radiology clinic of the Atatürk University Dentistry Faculty with painless swelling on the left side of face. Extra-oral clinical examination showed a marked facial asymmetry. Mildly tender, freely movable lesion that over the underlying structures was detected the palpation of the relevant region. Panoramic radiographic examination did not display any abnormality at left side bone structures (mandibular ramus, preauricular area etc). Contrast-enhanced MR was performed. Heterogeneous enhancement, lobulated, well-defined lesion

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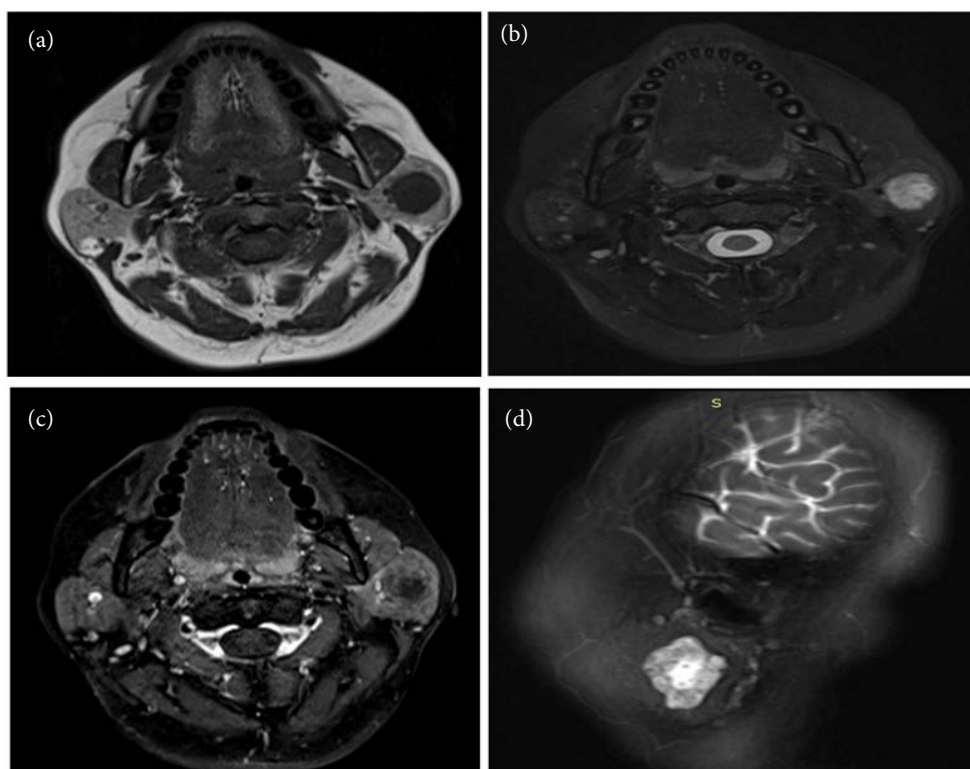


Figure 1: (a) Axial MRI-T1 weighted image shows a well defined hypointense lesion, (b) Axial fat saturated MRI-T2 weighted image shows a hyper intense lesion, (c) Contrast-enhanced fat saturated T1 weighted image shows minimal enhanced lesion and non-enhancing necrotic areas, (d) Sagittal fat saturated T2 weighted shows lobulated hyperintense lesion.

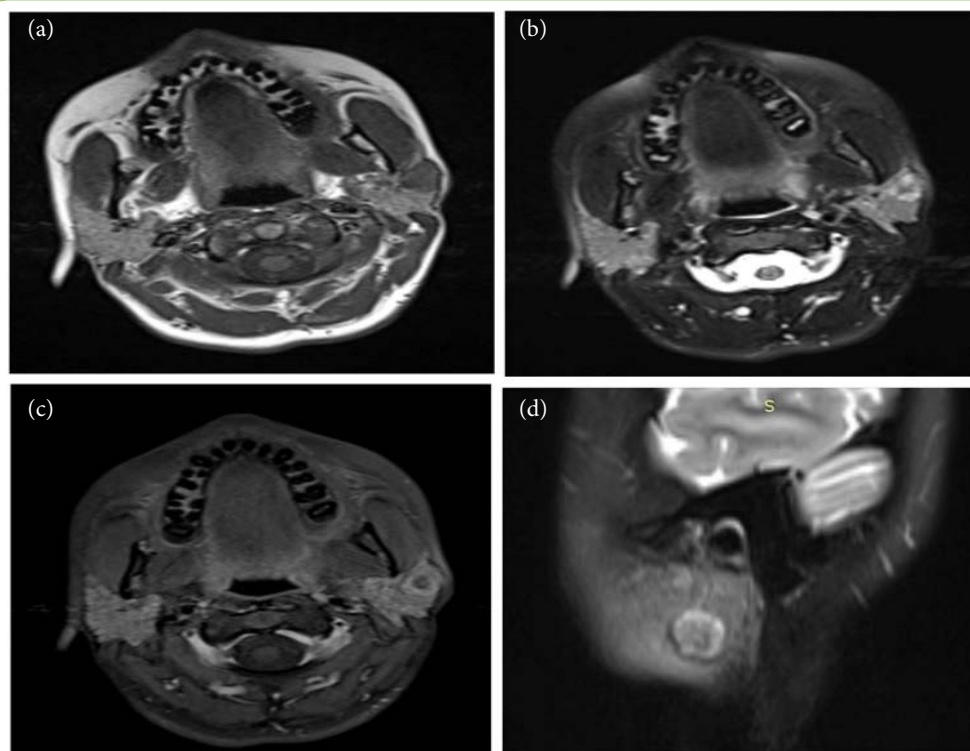


Figure 2: (a) Axial MRI-T1 weighted image shows a well defined hypointense lesion, (b) Axial fat saturated MRI-T2 weighted image shows a heterogenous hyperintense lesion, (c) Contrast-enhanced fat saturated T1 weighted image shows peripheral minimal enhanced lesion and non-enhancing necrotic areas, (d) Sagittal fat saturated T2 weighted shows hyperintense lesion.

area in superficial lobe of the parotid gland was seen in the post-contrast sections. (Figure 2) The size of the lesion was measured 20.6×31.1×26.5 mm. Patient was directed to surgery clinic with the prediagnosis of benign parotid tumor, PA or Warthin's tumor etc. After total surgical excision of the parotid gland, histopathological examination was performed and diagnosed as PA.

Discussion

World Health Organization (WHO) described PA as a well-defined tumor that characterized by pleomorphic or mixed appearance, in 1972. Although the lesion offers varied histological features because of different compounds with a myxoid or chondroid matrix, it is generally regarded to be a benign neoplasm [10,11]

While the precise etiology is uncertain, the incidence increases from years after exposure to radiation. Some studies have enounced an association of the tumor with simian virüs 40 [12].

PA has a glandular origin in head, neck region and usually emerges as a mobile, slow progressing, asymptomatic swelling [9]. Large tumors may be seen as a single, irregular nodular mass stretching the overlying skin or mucosa [13]. This salivary gland tumor most commonly arising in the parotid gland. PA in the parotid gland is frequently seen below the lobule of ear and overlying the angle of the mandible. Facial nerve injury is uncommon sign in parotid tumors, but unregarded large tumors may present facial nerve injury [14,15].

Most studies have shown that females are more affected than males and the tumor occurs commonly between the fourth and fifth decades of life [16,17].

The important diagnostic modalities are Fine Needle Aspiration Cytology (FNAC) and imaging modalities which contain Ultrasonography (US), Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). FNAC is widely accepted preoperative diagnostic tool for the diagnostic accuracy [18]. Ultrasonography is used for the detection of size, location, check the presence of calcification, estimate extraglandular/ intraglandular position [19]. CT shows bone invasion degree [20]. MRI is an advantageous diagnostic tool because it allows better imaging of soft tissues, better definition of tumor boundaries and relationships with surrounding structures [21]. Brown et al. [22] stated that MRI research is the most important method for clinically determining the cause of the facial swelling in patients with suspected salivary gland disease. In the present case we reached the diagnosis accompanied by MRI findings.

PA's are generally can showed the lobulation, followed a well-defined, heterogeneous lesion in MRI which show low intensity in T1 weighted MRI, high signal intensity in T2 weighted MRI [23,24]. MRI findings in the present case were consistent with the literature.

MRI has the superiority to determined whether the tumor originated the superficial or the deep lobe of the parotid [25].

Surgical excision is the main treatment of PA which can grow to huge rates if left untreated. The aim of surgery is to entirely remove the tumor without risking recurrence. Recurrence and longevity are risk factors for malignant transformation [26]. Long-standing PA may give rise to malignant tumors, in particular carcinoma, both in minor and major salivary glands [27-29]. Therefore, early diagnosis, immediate treatment and regular follow up are essential to prevent the risk of recurrence and rare changes of malignant transformation.

As a result, CT or MRI should be preferred in those patients with parotid masses, when the deep lobe tumors and suspected malignancy.

Competing Interests

The authors declare that they have no competing interests.

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