Case 11682

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Section: Head & neck imaging
Area of Interest: Head and neck
Procedure: Diagnostic procedure
Procedure: Contrast agent-intravenous
Procedure: Technical aspects
Procedure: Surgery
Imaging Technique: CT
Imaging Technique: MR
Imaging Technique: Image manipulation / Reconstruction
Imaging Technique: Experimental
Special Focus: Pathology Lymphoma Case Type: Clinical Cases
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Patient: 48 years, male

Clinical History:

A 48-year-old male patient was referred to our hospital with a four month history of a right submandibular swelling, which was not painful or tender; the overlying skin did not show any alterations. The patient did not have fever, weight loss, night sweats, or pruritus. The patient presented clinical features of permanent impairment of the parenchymal function.
Imaging Findings:

CT and MRI scans were performed with and without contrast injection. The CT scan demonstrated two well-circumscribed lesions with the dimensions of 33 x 19 mm and 42 x 25 mm at the submandibular gland on the right side. These lesions showed homogeneous enhancement after contrast injection. The MRI protocol included T1-weighted, T2 weighted, and T2 SPIR sequences. Contrast gadolium-enhanced sequences showed homogeneous enhancement of the tissue. Contrast CT revealed no other lesions. The patient underwent a fine needle aspiration cytology (FNAC) that reported the presence of red blood cells mixed with lymphocytes. Diagnosis of a chronic inflammatory process was made. According to the cytology report the patient underwent surgery of the submandibular gland finding two nodular growths on the smooth surface with elastic consistency and similar characteristics, but both tenaciously adherent to the submandibular gland which appeared swollen and hard. These structures were removed and sent for histological examination.

Discussion:

The majority of primary malignant tumours, affecting the salivary glands are varieties of non-Hodgkin's lymphomas of B-cell type (38%), followed by adenoid cystic carcinoma (15.5%), mucoepidermoid carcinoma (15.5%), Hodgkin's Lymphomas (7%), other varieties (24%)[1]. Primary involvement of salivary glands is uncommon. Küttner's tumour is a benign tumour-like lesion of the salivary glands. It predominantly affects the submandibular gland. It is also known as chronic sclerosing sialoadenitis or cirrhosis of the submandibular gland. This is an under-recognised entity in the surgical pathology and cytology literature[2]. The etiological factor for primary lymphoma of the salivary gland region is unclear[3]. Oral lymphomas are frequently seen with acquired immune deficiency syndrome (AIDS)[4]. The present case was seronegative for HIV. The most common presentation of primary oral and paraoral lymphoma is a painless local mass with superficial ulceration [4].

In our case, the patient presented with two indolent submandibular masses on the right side. Systemic clinical symptoms were absent.

Imaging is an integral component of accurate diagnosis and should form part of the overall management of submandibular gland masses. The diagnostic imaging modalities include ultrasound (US), sialography, computed tomography (CT) and magnetic resonance imaging (MRI)[5]. In Europe and Asia, US is the preliminary imaging method of choice, whereas in the USA, CT and MRI are advocated, with US reportedly being under-utilized. [6, 7]. While FNAC is usually able to provide a cytological diagnosis, core biopsy has the advantage of safely providing a diagnosis with subtyping lymphoma lesions and allowing determination of appropriate treatment [8, 9].

To determine the prognosis and to guide therapy, staging is important. The Ann Arbor staging system is one of the most widely used systems, and includes physical examination, hematological tests, imaging studies, and selective biopsies [2].

In our case, the clinical findings and the fine-needle aspiration cytologic findings strongly suggested the diagnosis of chronic inflammatory process. After the patient underwent surgical intervention, the histological examination showed a glandular parenchyma characterized by a partial impairment of the gland, affected by intense lymphocytic infiltrate which highlighted the presence of lymphocyte-predominant Hodgkin lymphoma. CT Whole Body revealed no other localizations of lymphoma so the diagnosis of stage 1 Hodgkin's lymphoma, according to the Ann Arbor classification, was made.

Final Diagnosis: Lymphocyte-predominant Hodgkin lymphoma.

References:


Description: CT scan in arterial phase shows a well-defined mass (42x25 mm) in the right submandibular gland with homogeneous enhancement. Origin: Department of Radiology, Tor vergata, Rome, Italy
**Figure 2 a**

**Description:** CT scan in arterial phase shows the second lesion (33x19 mm) with homogeneous enhancement. **Origin:** Department of Radiology, Tor Vergata, Rome Italy
Description: Axial T1-weighted MR image showed a well-circumscribed focal mass with low signal intensity. Origin: Department of Radiology, Tor vergata Rome Italy
Description: On the T2-weighted image the two lesions appear well-defined with intermediate signal intensity. Origin: Department of Radiology, Tor Vergata Rome Italy
Description: On T2 fat-saturation image the lesions appear hyperintense. Origin: Department of Radiology, Tor Vergata Rome Italy.
Figure 6

Description: Post contrast T1-fat saturated image shows strong enhancement of the lesions. Origin: Department of Radiology, Tor Vergata, Rome Italy.
Description: The cytology describes the presence of erythrocytes and lymphocytes of varying size compatible with a chronic inflammation (Kuttner’s tumour). **Origin:** Department of Radiology, Tor Vergata Rome Italy
**Description:** Lymphocyte-predominant Hodgkin's lymphoma. It is characterised by the presence of Reed Steinberg cells with an infiltrate of T and B lymphocytes CD3 +, and immunophenotype CD30 + CD79a and CD15 -. **Origin:** Department of Radiology, Tor Vergata Rome Italy
Figure 9

Description: Engraving Sebileau submandibular, incision of platysma muscle, identification of the submandibular gland compressed by lymph node structures. Origin: Department of Radiology, Tor Vergata Rome Italy.