Thyroid Synovial Sarcoma: A Case Report

Ali Ghafouri[1], Taha Anbara[1], Ali Mir[1], Marzieh Lashkari[2], and Mohammad Nazari[1]

[1] *Department of Surgery, Shariati Hospital, School of Medicine, Tehran University of Medical Sciences, Iran*

[2] *Department of Radiation Oncology, Tehran cancer institute, School of Medicine, Tehran University of Medical Sciences, Iran*

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Abstract- Sarcomas are rare tumors account for about 1% of cancers in adult. Soft tissue sarcomas are the most common one. Synovial sarcoma's incident is about 10% of all sarcomas and most commonly rise from para-articular regions in young adults. Based on our knowledge there have been only two reports of thyroid synovial sarcoma in medical literature. We report a 44-year old woman presented with a rapid growing neck mass. The pathology report revealed sarcoma and the immunohistochemistry (IHC) was compatible with synovial sarcoma. It could be understood that synovial sarcoma can be found in various tissues even if there is no synovial cells.

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Introduction

Sarcomas are a group of tumors with different types which usually arise from the mesoderm. They are rare tumors and account for about 1% of cancers in adults. The most common histological subtype is malignant fibrous histiocytoma. Synovial sarcoma is about 10% of sarcomas and they occur most commonly in areas near joints in young adults but they also can occur in head and neck region.

Thyroid sarcomas were frequently reported before 20th century. Subsequent investigations made the incidence under question. In 1940 Ewing expressed that thyroid sarcomas do not exist and all previous reports are mainly anaplastic carcinomas. From that day till know there has been cases of originally thyroid sarcomas such as Kaposi sarcoma, leiomyosarcoma, synovial sarcoma and radiation induced sarcoma but they are very rare in incidence (1).

Synovial sarcoma is a soft tissue sarcoma with an incidence of 5% to 10% most commonly after second decade of life. About 85% of these tumors originate from para-articular areas of extremities but they can occur in head, neck and trunk as well. When synovial sarcomas arise in these unusual sites, recognition and differential diagnosis becomes more difficult (2). The name of the tumor reflects its biphasic pattern, considered to be comparable with the structure of the normal synovial tissue presenting both lining cells and synovial stromal cells (3,4). It has two main subtypes: The biphasic type with distinct epithelial and spindle cell components and the monophasic fibrous type. Synovial sarcoma of the head and neck region account for about 10% of all cases (5).

Case Report

A 44-year old woman presented with complaint of a 4 month neck mass. The mass was rapidly increased in size in the first month. An open biopsy had been done in another center about one month ago. In this duration the neck was filled with the mass completely and dyspnea was added to patient's complaints. There were no dysphagia and weight loss in her history. She had no positive family, past medical and drug history. All physical exams beside the neck exam were normal. In the neck examination, previous Kocher scar was obvious and there was a huge fixed firm mass which was filled the anterior neck completely (Figure 1). Computed tomographic scan showed a large tumor with tracheal deviation (Figure 2). All laboratory data were normal including thyroid function tests.

Subsequently the patient underwent surgery. There was an encapsulated mass about 170 x 140 x 60mm in diameter. When trying for total excision, the capsule was ruptured and multiple segments of necrotic mass were taken out. Macroscopically it was an irregular fragile soft tissue (Figure 3).

Corresponding Author: Ali Mir
Department of Surgery, Shariati Hospital, School of Medicine, Tehran University of Medical Sciences, Iran
Tel: +98 912 3490694, Fax: +98 21 88077526, E-mail: amna207@yahoo.com

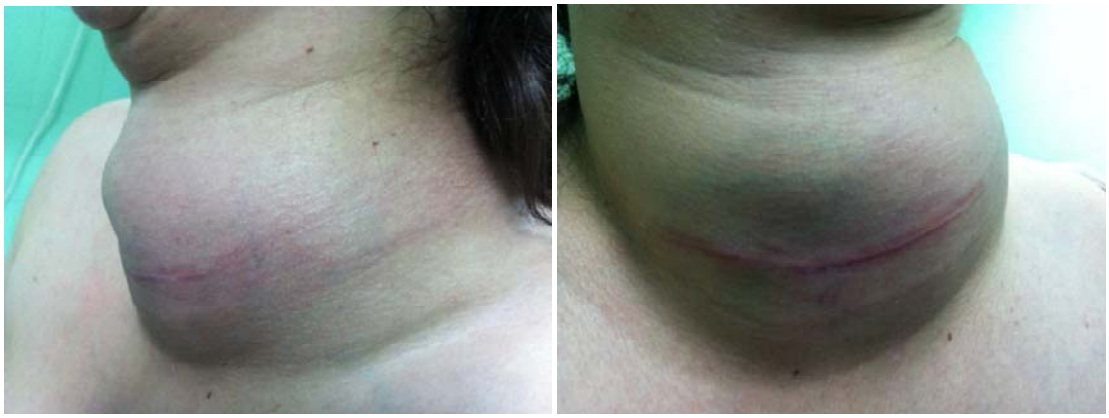

Figure 1. Neck mass.

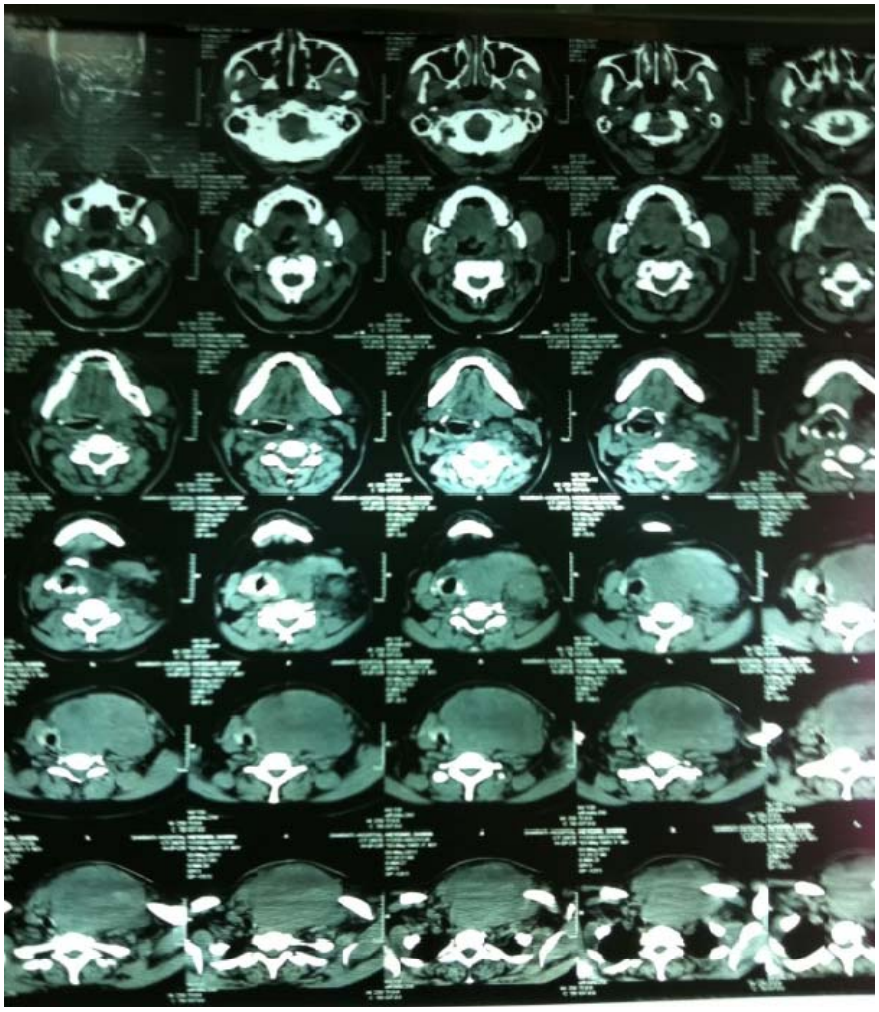

Figure 2. Neck CT scan.

The pathology report was spindle cell tumor with pleomorphism and necrosis (Figure 4).

The pathology slides and blocks were reviewed by three expert pathologists. All reports were Spindle cell tumor. Immunohistochemistry (IHC) was carried out. Two IHC reports confirmed sarcoma which one of them reported compatibility with synovial sarcoma. One pathology report revealed the probability of sarcomatoid carcinoma. The IHC of the first two centers was negative for Thyro, TTF1, EMA and was positive for vimentin. In the third IHC report vimentin was also negative but the block was strongly positive for EGFR.

Figure 3. Macroscopic view of tumor.

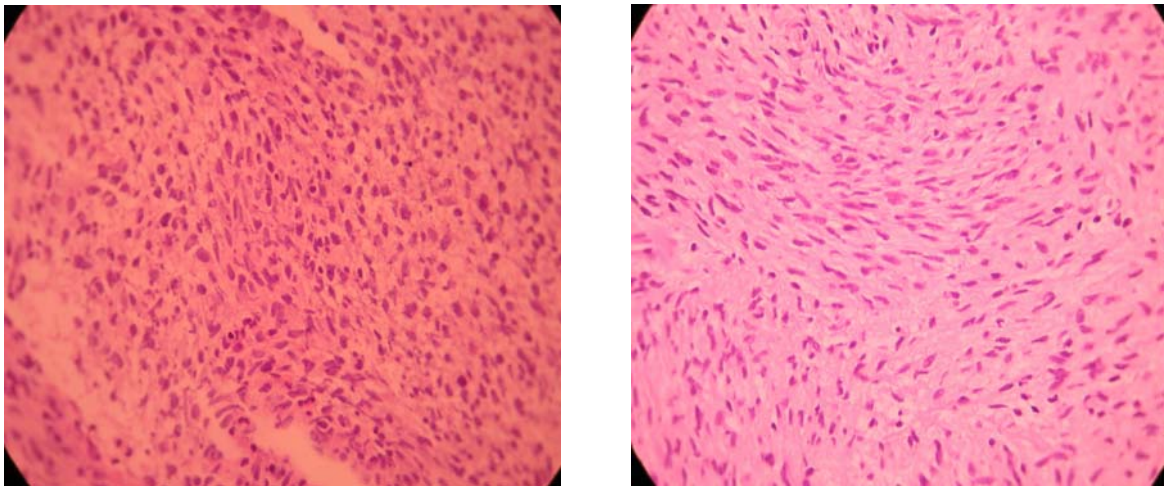

Figure 4. Microscopic view of tumor.

Discussion

Sarcomas are not frequently reported in thyroid tissue today. A very rare sarcoma reported in thyroid is synovial sarcoma which to our knowledge has been reported in only 2 cases (2,6).

The diagnosis is based on pathology and IHC staining. Like both thyroid synovial sarcomas reported by Kikuchi *et al.* and Jang *et al.* the pathology showed spindle cell proliferation (2,6). As for thyroid synovial sarcoma reported by Jang *et al.* in 2007 in a 15 year old man this tumor was encapsulated -but much bigger- and negative for TTF1, synaptophysin, chromogranin, thyroglobulin (6). But in two IHC report of our case it was also negative for vimentin which was in contrast with previous report. EGFR was strongly positive in our case which can be a potential target in soft tissue sarcomas.

Cytogenetic techniques could provide more information leading to more accurate diagnosis (SYT-SSX fusion gene transcripts) (5,6).

However it could be understand that synovial sarcomas may be developed in unusual locations (*e.g.* the thyroid gland) even if there is no true synovial cells. Of course more genetic, pathologic and IHC staining studies are needed for definitive diagnosis.

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