# World Journal of *Clinical Cases*

World J Clin Cases 2021 February 16; 9(5): 999-1246





Published by Baishideng Publishing Group Inc

W J C C World Journal of Clinical Cases

#### Contents

#### Thrice Monthly Volume 9 Number 5 February 16, 2021

#### **MINIREVIEWS**

999 Remote nursing training model combined with proceduralization in the intensive care unit dealing with patients with COVID-19

Wang H, Kang K, Gao Y, Yang B, Li J, Wang L, Bi Y, Yu KJ, Dai QQ, Zhao MY

#### **ORIGINAL ARTICLE**

#### **Case Control Study**

1005 Metabolic syndrome, ApoE genotype, and cognitive dysfunction in an elderly population: A single-center, case-control study

Wang JY, Zhang L, Liu J, Yang W, Ma LN

1016 Serum neuron-specific enolase: A promising biomarker of silicosis

Huang HB, Huang JL, Xu XT, Huang KB, Lin YJ, Lin JB, Zhuang XB

#### **Retrospective Study**

1026 Biochemical recurrence of pathological T2+ localized prostate cancer after robotic-assisted radical prostatectomy: A 10-year surveillance

Yang CH, Lin YS, Ou YC, Weng WC, Huang LH, Lu CH, Hsu CY, Tung MC

#### **Observational Study**

- 1037 Clinical characteristics of perineal endometriosis: A case series Liang Y, Zhang D, Jiang L, Liu Y, Zhang J
- 1048 Safety of gastrointestinal endoscopy in patients with acute coronary syndrome and concomitant gastrointestinal bleeding

Elkafrawy AA, Ahmed M, Alomari M, Elkaryoni A, Kennedy KF, Clarkston WK, Campbell DR

#### SYSTEMATIC REVIEWS

1058 Clinical features of SARS-CoV-2-associated encephalitis and meningitis amid COVID-19 pandemic Huo L, Xu KL, Wang H

#### **CASE REPORT**

- 1079 Neuropathy and chloracne induced by 3,5,6-trichloropyridin-2-ol sodium: Report of three cases Ma Y, Cao X, Zhang L, Zhang JY, Qiao ZS, Feng WL
- 1087 Effect of rifampicin on anticoagulation of warfarin: A case report Hu YN, Zhou BT, Yang HR, Peng QL, Gu XR, Sun SS
- 1096 Severe lumbar spinal stenosis combined with Guillain-Barré syndrome: A case report Xu DF, Wu B, Wang JX, Yu J, Xie JX



	World Journal of Clinical C	
Conten	ts Thrice Monthly Volume 9 Number 5 February 16, 2021	
1103	Treatment of pediatric intracranial dissecting aneurysm with clipping and angioplasty, and next- generation sequencing analysis: A case report and literature review	
	Sun N, Yang XY, Zhao Y, Zhang QJ, Ma X, Wei ZN, Li MQ	
1111	Imaging characteristics of a rare case of monostotic fibrous dysplasia of the sacrum: A case report <i>Liu XX, Xin X, Yan YH, Ma XW</i>	
1119	Primary aldosteronism due to bilateral micronodular hyperplasia and concomitant subclinical Cushing's syndrome: A case report	
	Teragawa H, Oshita C, Orita Y, Hashimoto K, Nakayama H, Yamazaki Y, Sasano H	
1127	Management of corneal ulceration with a moisture chamber due to temporary lagophthalmos in a brain injury patient: A case report	
	Yu XY, Xue LY, Zhou Y, Shen J, Yin L	
1132	32 Bronchoscopy for diagnosis of COVID-19 with respiratory failure: A case report	
	Chen QY, He YS, Liu K, Cao J, Chen YX	
1139	Pembrolizumab as a novel therapeutic option for patients with refractory thymic epithelial tumor: A case report	
	Wong-Chong J, Bernadach M, Ginzac A, Veyssière H, Durando X	
1148	Successful bailout stenting strategy against rare spontaneous retrograde dissection of partially absorbed magnesium-based resorbable scaffold: A case report	
	Liao ZY, Liou JY, Lin SC, Hung HF, Chang CM, Chen LC, Chua SK, Lo HM, Hung CF	
1156	Chronic myelomonocytic leukemia-associated pulmonary alveolar proteinosis: A case report and review of literature	
	Chen C, Huang XL, Gao DQ, Li YW, Qian SX	
1168	Obturator nerve impingement caused by an osteophyte in the sacroiliac joint: A case report	
	Cai MD, Zhang HF, Fan YG, Su XJ, Xia L	
1175	Venetoclax in combination with chidamide and dexamethasone in relapsed/refractory primary plasma cell leukemia without t(11;14): A case report	
	Yang Y, Fu LJ, Chen CM, Hu MW	
1184	Heterochronic triple primary malignancies with Epstein-Barr virus infection and tumor protein 53gene mutation: A case report and review of literature	
	Peng WX, Liu X, Wang QF, Zhou XY, Luo ZG, Hu XC	
1196	Negative conversion of autoantibody profile in chronic hepatitis B: A case report	
	Zhang X, Xie QX, Zhao DM	
1204	Dumbbell-shaped solitary fibrous tumor in the parapharyngeal space: A case report	
	Li YN, Li CL, Liu ZH	
1210	Spontaneous small bowel perforation secondary to <i>Vibrio parahaemolyticus</i> infection: A case report <i>Chien SC, Chang CC, Chien SC</i>	



Carta	World Journal of Clinical Cases
Conter	Thrice Monthly Volume 9 Number 5 February 16, 2021
1215	Management protocol for Fournier's gangrene in sanitary regime caused by SARS-CoV-2 pandemic: A case report
	Grabińska A, Michalczyk Ł, Banaczyk B, Syryło T, Ząbkowski T
1221	Infective bicuspid aortic valve endocarditis causing acute severe regurgitation and heart failure: A case report
	Hou C, Wang WC, Chen H, Zhang YY, Wang WM
1228	Endoscopic repair of delayed stomach perforation caused by penetrating trauma: A case report
	Yoon JH, Jun CH, Han JP, Yeom JW, Kang SK, Kook HY, Choi SK
1237	Bilateral musculocutaneous neuropathy: A case report
	Jung JW, Park YC, Lee JY, Park JH, Jang SH



#### Contents

#### Thrice Monthly Volume 9 Number 5 February 16, 2021

#### **ABOUT COVER**

Editorial Board Member of World Journal of Clinical Cases, Dr. Antonio Corvino is a PhD in the Motor Science and Wellness Department at University of Naples "Parthenope". In 2008, he obtained his MD degree from the School of Medicine, Second University of Naples. Then, he completed a residency in Radiology in 2014 at University Federico II of Naples. In 2015, he undertook post-graduate training at Catholic University of Rome, obtaining the 2 nd level Master's degree in "Internal Ultrasound Diagnostic and Echo-Guided Therapies". In 2016-2018, he served on the directive board of Young Directive of Italian Society of Ultrasound in Medicine and Biology. His ongoing research interests involve ultrasound and ultrasound contrast media in abdominal and non-abdominal applications, etc. (L-Editor: Filipodia)

#### **AIMS AND SCOPE**

The primary aim of World Journal of Clinical Cases (WJCC, World J Clin Cases) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

#### **INDEXING/ABSTRACTING**

The WJCC is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, Scopus, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for WJCC as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3. The WJCC's CiteScore for 2019 is 0.3 and Scopus CiteScore rank 2019: General Medicine is 394/529.

#### **RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: Jia-Hui Li; Production Department Director: Yu-Jie Ma; Editorial Office Director: Jin-Lei Wang.

NAME OF JOURNAL	INSTRUCTIONS TO AUTHORS
World Journal of Clinical Cases	https://www.wignet.com/bpg/gerinfo/204
ISSN	GUIDELINES FOR ETHICS DOCUMENTS
ISSN 2307-8960 (online)	https://www.wjgnet.com/bpg/GerInfo/287
LAUNCH DATE	GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH
April 16, 2013	https://www.wjgnet.com/bpg/gerinfo/240
FREQUENCY	PUBLICATION ETHICS
Thrice Monthly	https://www.wjgnet.com/bpg/GerInfo/288
EDITORS-IN-CHIEF	PUBLICATION MISCONDUCT
Dennis A Bloomfield, Sandro Vento, Bao-gan Peng	https://www.wjgnet.com/bpg/gerinfo/208
EDITORIAL BOARD MEMBERS	ARTICLE PROCESSING CHARGE
https://www.wjgnet.com/2307-8960/editorialboard.htm	https://www.wjgnet.com/bpg/gerinfo/242
PUBLICATION DATE	STEPS FOR SUBMITTING MANUSCRIPTS
February 16, 2021	https://www.wjgnet.com/bpg/GerInfo/239
COPYRIGHT	ONLINE SUBMISSION
© 2021 Baishideng Publishing Group Inc	https://www.f6publishing.com
© 2021 Baichideng Publiching Group Inc. All rights	reserved 7041 Koll Center Parkway Spite 160 Pleasanton CA 94566 LISA

E-mail: bpgoffice@wjgnet.com https://www.wjgnet.com



W J C C World Journal of Clinical Cases

# World Journal of

Submit a Manuscript: https://www.f6publishing.com

World J Clin Cases 2021 February 16; 9(5): 1204-1209

DOI: 10.12998/wjcc.v9.i5.1204

ISSN 2307-8960 (online)

CASE REPORT

## Dumbbell-shaped solitary fibrous tumor in the parapharyngeal space: A case report

Yu-Nuo Li, Chun-Lei Li, Zhao-Hui Liu

ORCID number: Yu-Nuo Li 0000-0003-2372-6712; Chun-Lei Li 0000-0003-2692-8328; Zhao-Hui Liu 0000-0001-6205-4731.

Author contributions: Li YN compiled the patient's data, reviewed the literature and wrote the manuscript; Li CL was the patient's surgeon and provided the patient's information; Liu ZH was responsible for the review and revision of the manuscript; All authors have issued final approval of the submitted version.

#### Informed consent statement: The

patient gave informed consent. Consent was obtained from the patient for publication of this report and any accompanying images.

Conflict-of-interest statement: The authors have no conflicts of interest to declare. None of the authors have received funding from any organization with a real or potential interest in the subject matter, materials, equipment, software, or devices discussed.

#### CARE Checklist (2016) statement:

The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an

Yu-Nuo Li, Chun-Lei Li, Zhao-Hui Liu, Department of Otolaryngology Head and Neck Surgery, The Affiliated Hospital of Zunyi Medical University, Zunyi 563000, Guizhou Province, China

Corresponding author: Zhao-Hui Liu, MD, Chairman, Chief Doctor, Professor, Department of Otolaryngology Head and Neck Surgery, The Affiliated Hospital of Zunyi Medical University, No. 149 Dalian Road, Huichuan District, Zunyi 563000, Guizhou Province, China. rzent@163.com

#### Abstract

#### BACKGROUND

Solitary fibrous tumors (SFTs) occurring in the parapharyngeal space are rare, and their final diagnosis depends on pathological and immunohistochemical analyses. Once the tumor is diagnosed, complete resection and regular postoperative follow-up are required.

#### CASE SUMMARY

A 40-year-old male patient with a right parotid gland mass discovered 8 years ago was admitted to hospital. The mass showed no tenderness or local skin redness. Imaging was carried out as the patient had stable vital signs and showed that the mass was a dumbbell-shaped tumor comprising a superficial tumor approximately 5 cm long and 3 cm wide in size that compressed the right parotid gland and a deep tumor located in the right parapharyngeal space approximately 4.5 cm long and 2.5 cm wide in size. Both tumors were connected in the middle. Prior to surgery, the tumors were considered to be parapharyngeal schwannomas. During surgical dissection, the tumors were found to be smooth and tough, without obvious adhesion to the surrounding tissues. The tumors were revealed to be a SFT following postoperative pathological analysis.

#### CONCLUSION

SFTs in the parapharyngeal space are rarely reported, and complete resection of such tumor is recommended. Adjuvant chemoradiotherapy is used in patients with extensive tumor invasion to lower the recurrence rate. Postoperative longterm follow-up is required.

Key Words: Parapharyngeal space tumor; Solitary fibrous tumor; Pathology and immunohis-tochemistry; Case report

©The Author(s) 2021. Published by Baishideng Publishing Group Inc. All rights reserved.



WJCC | https://www.wjgnet.com

open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: htt p://creativecommons.org/License s/by-nc/4.0/

Manuscript source: Unsolicited manuscript

Specialty type: Medicine, research and experimental

Country/Territory of origin: China

#### Peer-review report's scientific quality classification

Grade A (Excellent): 0 Grade B (Very good): 0 Grade C (Good): C Grade D (Fair): 0 Grade E (Poor): 0

Received: November 7, 2020 Peer-review started: November 7. 2020 First decision: November 20, 2020 Revised: December 3, 2020 Accepted: December 26, 2020 Article in press: December 26, 2020 Published online: February 16, 2021

P-Reviewer: Urabe M S-Editor: Huang P L-Editor: Filipodia P-Editor: Li JH



**Core Tip:** Parapharyngeal space solitary fibrous tumor (SFT) is quite rare. In this case study, a dumbbell-shaped SFT in the parapharyngeal space in a male patient is reported. The tumor was completely excised under general anesthesia, and postoperative recovery was uneventful. The diagnosis, pathology and treatment methods of SFTs are discussed in this report.

Citation: Li YN, Li CL, Liu ZH. Dumbbell-shaped solitary fibrous tumor in the parapharyngeal space: A case report. World J Clin Cases 2021; 9(5): 1204-1209 URL: https://www.wjgnet.com/2307-8960/full/v9/i5/1204.htm DOI: https://dx.doi.org/10.12998/wjcc.v9.i5.1204

#### INTRODUCTION

Solitary fibrous tumor (SFT) is a relatively rare tumor in clinical practice and is mainly seen in the pleura<sup>[1]</sup>. Head and neck SFTs mainly occur in the orbit and oral cavity<sup>[2]</sup> and are rarely found in the parapharyngeal space. Here, we report a rare dumbbellshaped SFT in the parapharyngeal space.

#### CASE PRESENTATION

#### Chief complaints

A 40-year-old man was admitted to our department due to a right parotid mass that was found 8 years ago.

#### History of present illness

Over the past 8 years, the tumor had slowly increased in size. A higher temperature could be felt through the skin where the tumor was located, but no tenderness or redness was observed.

#### History of past illness

The patient had no history of surgical trauma, chronic disease or allergies.

#### Personal and family history

The patient rarely drinks alcohol but has been a smoker for 20 years, with an average of one pack of cigarettes per day. His family members are in good health and have no similar diseases.

#### Physical examination

A palpable mass approximately  $5 \text{ cm} \times 4 \text{ cm} \times 3 \text{ cm}$  in size was observed near the parotid gland on the right. The mass was tough with moderate mobility, but there was no tenderness, obvious redness, swelling or pain. There were no palpable enlarged lymph nodes in the neck.

#### Laboratory examinations

No abnormalities were found on routine blood tests, biochemical examination, electrocardiogram and chest radiograph.

#### Imaging examinations

On magnetic resonance imaging (MRI) an isometric T1 long T2 signal mass with a clear boundary and a maximum cross-section of approximately 31 mm × 36 mm and a vertical diameter of about 50 mm was observed on the right parotid gland. At the right parapharyngeal space, irregular T1 slightly longer T2 signal masses with clear centered boundaries and a maximum cross-section of approximately 20 mm × 45 mm were found. The tumors were initially diagnosed as parotid masses, with calcium acini, parapharyngeal space irregular masses and enlarged lymph nodes, but pleomorphic adenoma was excluded. Pre-surgical reassessment of the imaging data revealed that the tumors were more likely to be a parapharyngeal space schwannoma.



#### FINAL DIAGNOSIS

SFT of the parapharyngeal space.

#### TREATMENT

Under general anesthesia, an incision was made via a parallel path from the back of the right ear to the submandibular area to explore and to protect the facial nerve, and the tumors in the deep surface of the parotid gland and the right parapharyngeal space were completely removed (Figure 1). Postoperative pathological results revealed that the isolated tumors from the right parapharyngeal and right parotid gland were fibrous tumors (intermediate tumors). Further analysis of the tumor cells by immunohistochemistry showed vimentin (+), signal transducer and activator of transcription 6 (STAT6) (+), CD34 (+), smooth muscle actin (blood vessel +), betacatenin pulp (+), CD31 (-), desmin (-), S100 (-) and Ki-67 (+ 3%) (Figure 2).

#### OUTCOME AND FOLLOW-UP

On day 5 after surgery, the patient had a slight droop in the right corner of his mouth. The nasolabial fold was normal and the brow furrow was wrinkled, but there was no discomfort in the surgical area.

#### DISCUSSION

Initially thought to be a type of mesothelioma, SFT is now generally believed to originate from CD34+ and B-cell lymphoma 2 (Bcl-2)+ dendritic mesenchymal cells. As SFTs are widely distributed in human connective tissues, they can occur in any part of the human body<sup>[3]</sup>. SFT is difficult to diagnose clinically as the histological changes in SFT are complex and diverse, making it difficult to distinguish SFT from other tumors. Currently, the diagnosis of SFT mainly relies on imaging studies and pathological examinations.

An SFT on computed tomography (CT) mostly presents as a round, well-defined and isolated mass without lobules or shallow lobules that are significantly associated with benign or malignant tumors<sup>[4]</sup>. Calcification may be present in the tumor, with the solid area being generally uniform in density, but with the cystic lesion area being generally low in density. Invasive or malignant SFT is prone to necrosis, hemorrhage and degeneration that lead to a relatively mixed CT density. Typical CT manifestations of most SFTs appear to be nodular or patchy, with sporadic calcification in slightly low-density areas that may exist in equally high- or slightly high-density areas<sup>[5,6]</sup>. Different tumor tissues exhibit different signals during MRI. A number of studies have reported that T1 weighted imaging (T1WI) can show low or isosignals, while T2 weighted imaging (T2WI) can show low or medium signals, or a mixture of low and high signals. For instance, long T1 and long T2 signals have been observed in cystic degeneration, and if the tumor contains a large amount of fibrous tissue, T1WI and T2WI signals are low. Contrast-enhanced scanning of the tumor can result in the tumor being moderately or significantly enhanced<sup>[2,5,7]</sup>.

Head and neck SFTs can be challenging to distinguish from neurilemmoma, cavernous hemangioma, pleomorphic adenoma, mucoepidermoid carcinoma and other diseases<sup>[2]</sup>. Typically, MRI scans of schwannoma show T1WI with low or isosignals and T2WI with high or slightly high signals; while those of atypical schwannoma show uneven T1WI and T2WI<sup>[8]</sup>. The main features of schwannoma on MRI scans can be summarized as follows: (1) Target sign: The central region and the edge region on T1WI show a medium signal and low signal, respectively; while the central region and the edge region on T2WI show an uneven signal and high signal, respectively<sup>[9]</sup>; (2) Nerve access sign: The main occurrence of tumors is in the large intermuscular nerve trunk; (3) Fat encapsulation and fatty tail sign: Fat encapsulation around the tumor is clearly shown on T1WI; and (4) Cerebrospinal fluid is present in the caudate<sup>[10]</sup>. Our patient had a clear boundary between the right parapharyngeal gland tumor and the right parotid gland tumor, and a connection was found between the tumors in the right parapharyngeal space. Therefore, the mass was considered to be a single dumbbell-shaped tumor that compressed the right parotid gland in the





Figure 1 Under general anesthesia, an incision was made via a parallel path from the back of the right ear to the submandibular area to explore and to protect the facial nerve, and the tumors in the deep surface of the parotid gland and the right parapharyngeal space were completely removed. A: A superficial tumor that compressed the parotid gland; B: A deep tumor in the parapharyngeal space; C: Resected tumors compared with a 10 mL syringe.

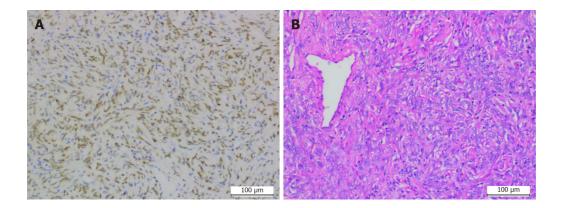


Figure 2 Immunohistochemistry of signal transducer and activator of transcription 6 (Elivision × 100) (A) and hematoxylin and eosin staining of tumor cells (× 100) (B).

parapharyngeal space (Figure 3). MRI scans showed that the right parotid tumor was a T1 long T2 signal mass with a clear boundary. Irregular T1 and slightly longer T2 signal masses with clear boundaries were seen in the center of the right parapharyngeal space. On the contrary, imaging findings revealed the fatty inclusion sign of a schwannoma (Figure 3), possibly due to the diversity and complexity of SFT tumor tissues. However, accurate diagnosis of SFT requires further postoperative pathological and immunohistochemical examinations.

In terms of pathological features, SFT cells have alternately arranged sparse and dense areas. The sparse areas mainly comprise fine spindle cells with insignificant heteromorphism. The cells in the rich area are mainly oval, round and short fusiform, with less cytoplasm, vacuolated nuclei and rare mitosis events. The cells can be arranged radially, mat striated, in bundles or in the shape of a fishbone. Intercellular collagen fibers of varying thickness and morphology as well as a large number of parenchymal blood vessels are often found in SFT. A few SFTs can have cystic changes and mucous changes. Due to the current lack of a unified standard method for the diagnosis of malignant SFT, most recognized malignant SFT cells are characterized by the presence of high tumor cell density, obvious atypia, mitotic phase count of  $\ge 4/10$ HPF, necrosis and hemorrhage<sup>[11,12]</sup>. In addition to pathomorphological analysis, immunohistochemistry evaluation is also important for the accurate diagnosis of SFT. SFT-positive immunohistochemical markers mainly include vimentin, CD34, CD99 and Bcl-2. A study showed that the widely distributed and strongly expressed CD34 is a specific marker for SFT<sup>[13]</sup>. Another study demonstrated that SFT cells have a CD99positive rate of approximately 70% and a Bcl-2-positive rate of about 35%<sup>[13,14]</sup>. However, Bcl-2 has been found to be more sensitive than CD34 in the diagnosis of malignant SFT<sup>[15]</sup>. Liu et al<sup>[16]</sup> have also indicated that CD34 expression can be decreased or lost in the mesogenetic region of SFT cells. Compared with tumors that share similar morphological characteristics and immunohistochemical expression to SFTs, it is difficult to diagnose accurately SFT through the joint application of immunohistochemical antibodies such as CD34, CD99, Bcl-2 and vimentin. Researchers



WJCC | https://www.wjgnet.com

Li YN et al. Dumbbell-shaped SFT in the parapharyngeal space

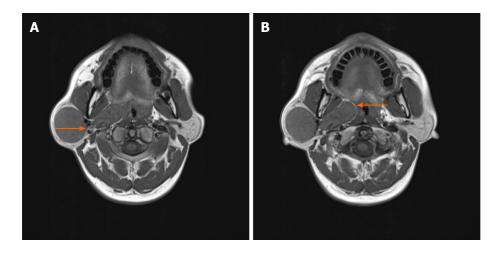


Figure 3 A clear boundary between the parotid gland tumor and the parotid gland is observed, and the two tumors are connected at the point indicated by the arrow (A) and fatty inclusion sign of a schwannoma is indicated by the arrow (B).

subsequently found that STAT6 expression is more specific in the diagnosis of SFT<sup>[17]</sup>. Yoshida et al<sup>[18]</sup> conducted immunohistochemical staining of STAT6 in 49 patients with SFT and 159 patients with non-SFT tumors, and the results showed that the 49 patients with SFT all displayed STAT6 prokaryotic expression, which was absent in more than 95% of patients with non-SFT tumors. Cheah et al<sup>[19]</sup> carried out immunohistochemical staining with RabMab antibody STAT6 on 54 patients with SFT and 99 patients with non-SFT tumors which share similar cytohistologic characteristics with SFT, and concluded that all 54 patients with SFT had positive expression of STAT6 in the nucleus, while 99 patients with non-SFT tumors all had negative expression of STAT6 in the nucleus. The above studies confirm that STAT6 is an immunohistochemical marker highly specific for SFT. The immunohistochemical evaluation of our patient showed results consistent with those for SFT diagnosis.

In terms of treatment methods, complete surgical resection is the main treatment approach. The tumors should be clearly distinguished from surrounding tissues as quickly as possible. SFT recurrence depends on whether the tumor has been completely removed during surgery<sup>[20]</sup>. As these tumors were unable to be clearly defined as benign or malignant before and during surgery, Zhu et al<sup>[21]</sup> have suggested that the resection range of SFT should be  $\geq 2$  cm from normal tissues. If the tumor is infiltrating or metastasizing, the scope of surgery should be expanded. For patients with incomplete removal and extensive tumor invasion, adjuvant chemoradiotherapy can be used to reduce the rate of recurrence. Malignant transformation of SFT in the head and neck is relatively rare<sup>[22]</sup>. SFT from pleural tissues that occurs in the abdominal cavity is more invasive with a higher recurrence rate and a worse prognosis compared to that from other areas<sup>[23]</sup>. Therefore, regular postoperative follow-up is very important.

#### CONCLUSION

We report a rare dumbbell-shaped parapharyngeal space SFT. Currently, the diagnosis of such diseases mainly relies on imaging and pathological examinations, but this case indirectly shows that preoperative imaging evaluation could lead to misdiagnosis of a non-typical SFT, and confirmation relies on postoperative pathological immunohistochemical results. As it is difficult to determine whether a tumor is benign or malignant before and during surgery, thorough tumor resection is necessary. We fully removed the tumor to avoid recurrence.

#### REFERENCES

- Zhou Y, Chu X, Yi Y, Tong L, Dai Y. Malignant solitary fibrous tumor in retroperitoneum: A case report and literature review. Medicine (Baltimore) 2017; 96: e6373 [PMID: 28296778 DOI: 10.1097/MD.00000000006373
- Qian W, Hu H, Ma G, Su GY, Xu XQ, Shi HB, Wu FW. CT and MRI feature of solitary fibrous 2



tumor in head and neck region. Zhongguo Yixue Yingxiang Jishu 2017; 33: 1744-1745 [DOI: 10.13929/j.1003-3289.201706086]

- Chan JK. Solitary fibrous tumour--everywhere, and a diagnosis in vogue. Histopathology 1997; 31: 3 568-576 [PMID: 9447390 DOI: 10.1046/j.1365-2559.1997.2400897.x]
- 4 Milenkovic BA, Stojsic J, Motohiko A, Dudvarski A, Jakovic R, Stevic R, Ercegovac M. Solitary fibrous pleural tumor associated with loss of consciousness due to hypoglycemia. Med Oncol 2009; 26: 131-135 [PMID: 18770052 DOI: 10.1007/s12032-008-9091-x]
- 5 Jiao YC, Ding X, Yang HB. Solitary fibrous tumors in the head and neck: a report of 5 cases. Shiyong Zhongliu Zazhi 2014; 29: 345-348 [DOI: 10.13267/j.cnki.syzlzz.2014.04.039]
- 6 Mao ZQ, Xiao XZ, Wang MJ. Imaging Diagnosis and Pathological Analysis of Solitary Fibrous Tumors. Jiangxi Yixueyuan Xuebao 2007; 47: 63-66
- 7 Tateishi U, Nishihara H, Morikawa T, Miyasaka K. Solitary fibrous tumor of the pleura: MR appearance and enhancement pattern. J Comput Assist Tomogr 2002; 26: 174-179 [PMID: 11884769 DOI: 10.1097/00004728-200203000-000021
- Xiu ZG, Lv FJ, Chen LP. Multivariater analysis of MRI imaging diagnosis of schwannoma. Chengdu 8 Yixueyuan Xuebao 2020; 15: 486-494
- 9 Shi FX, Liu JB, Guo YQ. Diagnostic Value of 3.0 T MRI in Nerve Sheath Tumor of Extremities: Report of 12 Cases. Linchuang Fangshe Xue Zazhi 2013; 32: 703-707 [DOI: 10.13437]
- 10 Ding XN, Yuan JH, Wang ZP. CT and MRI Features of Peripheral Neurilemoma. Fangshe Xue Shijian 2009; 24: 305-308
- 11 Tanaka M, Sawai H, Okada Y, Yamamoto M, Funahashi H, Hayakawa T, Takeyama H, Manabe T. Malignant solitary fibrous tumor originating from the peritoneum and review of the literature. Med Sci Monit 2006; 12: CS95-CS98 [PMID: 17006407]
- England DM, Hochholzer L, McCarthy MJ. Localized benign and malignant fibrous tumors of the 12 pleura. A clinicopathologic review of 223 cases. Am J Surg Pathol 1989; 13: 640-658 [PMID: 2665534 DOI: 10.1097]
- 13 Ma J, Du J, Zhang Z, Wang H, Wang J. Synchronous primary triple carcinoma of thyroid and kidney accompanied by solitary fibrous tumor of the kidney: a unique case report. Int J Clin Exp Pathol 2014; 7: 4268-4273 [PMID: 25120808]
- 14 Ronchi A, Cozzolino I, Zito Marino F, Accardo M, Montella M, Panarese I, Roccuzzo G, Toni G, Franco R, De Chiara A. Extrapleural solitary fibrous tumor: A distinct entity from pleural solitary fibrous tumor. An update on clinical, molecular and diagnostic features. Ann Diagn Pathol 2018; 34: 142-150 [PMID: 29660566 DOI: 10.1016/j.anndiagpath.2018.01.004]
- Bishop JA, Rekhtman N, Chun J, Wakely PE Jr, Ali SZ. Malignant solitary fibrous tumor: 15 cytopathologic findings and differential diagnosis. Cancer Cytopathol 2010; 118: 83-89 [PMID: 20209623 DOI: 10.1002/cncy.20069]
- Liu TY, Zhong L. Clinicopathological analysis of malignant solitary fibrous tumor and literature 16 review. Xiandai Zhongliu Yixue 2020; 28: 635-638 [DOI: 10.3969]
- 17 Doyle LA, Vivero M, Fletcher CD, Mertens F, Hornick JL. Nuclear expression of STAT6 distinguishes solitary fibrous tumor from histologic mimics. Mod Pathol 2014; 27: 390-395 [PMID: 24030747 DOI: 10.1038/modpathol.2013.164]
- Yoshida A, Tsuta K, Ohno M, Yoshida M, Narita Y, Kawai A, Asamura H, Kushima R. STAT6 18 immunohistochemistry is helpful in the diagnosis of solitary fibrous tumors. Am J Surg Pathol 2014; 38: 552-559 [PMID: 24625420 DOI: 10.1097/PAS.00000000000137]
- Cheah AL, Billings SD, Goldblum JR, Carver P, Tanas MZ, Rubin BP. STAT6 rabbit monoclonal 19 antibody is a robust diagnostic tool for the distinction of solitary fibrous tumour from its mimics. Pathology 2014; 46: 389-395 [PMID: 24977739 DOI: 10.1097/PAT.00000000000122]
- 20 Insabato L, Siano M, Somma A, Gentile R, Santangelo M, Pettinato G. Extrapleural solitary fibrous tumor: a clinicopathologic study of 19 cases. Int J Surg Pathol 2009; 17: 250-254 [PMID: 19443888 DOI: 10.1177/1066896909333779]
- Zhu L, Lin L, GUO DW. Diagnosis and Surgical Treatment of Solitary Fibrous Tumour. Zhongguo Puwai Jichu Yu Linchuang Zazhi 2012; 19: 99-101
- 22 Cox DP, Daniels T, Jordan RC. Solitary fibrous tumor of the head and neck. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2010; 110: 79-84 [PMID: 20488732 DOI: 10.1016/j.tripleo.2010.01.023
- Cranshaw IM, Gikas PD, Fisher C, Thway K, Thomas JM, Hayes AJ. Clinical outcomes of extra-23 thoracic solitary fibrous tumours. Eur J Surg Oncol 2009; 35: 994-998 [PMID: 19345055 DOI: 10.1016/j.ejso.2009.02.015]

WJCC | https://www.wjgnet.com



### Published by Baishideng Publishing Group Inc 7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA Telephone: +1-925-3991568 E-mail: bpgoffice@wjgnet.com Help Desk: https://www.f6publishing.com/helpdesk https://www.wjgnet.com

