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Short Report

# Neurilemmoma of Seminal Vesicle: A Case Report

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## ABSTRACT

Neurilemmoma of the seminal vesicle is an extremely rare tumor. We report a neurilemmoma of right seminal vesicle. A 67-year-old man presented with moderate lower urinary tract symptoms. A magnetic resonance imaging of prostate performed due to high level of prostate specific antigen revealed a 8.1x8.1x7.1 cm, arising from right seminal vesicle. Laparoscopic resection of tumor was performed. The histopathology showed neurilemmoma arising from seminal vesicle.

**Keywords:** neurilemmoma; Schwannoma; seminal vesicle

## INTRODUCTION

Tumor of seminal vesicles (SV) are unusual. Several types of benign pathology of SV include cystadenoma, papillary adenoma, leiomyoma, neurilemmoma (Schwannoma) and epithelial stromal tumor.[1] The malignant neoplasms of SV include adenocarcinoma, leiomyosarcoma, angiosarcoma and cystosarcoma phyllodes. Schwannoma, also known as neurilemmoma, is a benign peripheral nerve sheath tumor consist of Schwann cells. Neurilemmoma usually located in head, neck, limbs, mediastinum and retroperitoneal space. The genitourinary organ including pelvic cavity and SV are not common sites for neurilemmoma.[2] The peak incidence of this disease occurs between the age of 20 and 50.[3] This report discusses a case of neurilemmoma of right seminal vesicle, who came into our hospital with lower urinary tract symptoms (LUTS).

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## SHORT REPORT

A 67-year-old, Thai male presented with moderate symptoms of LUTS. He complained weak stream, straining of urination and sense of incomplete voiding for 1 year. He also gave history of nocturia for 1-2 times/night. He denied having a history of gross hematuria or hematspermia. His underlying disease was dyslipidemia. Current medication was simvastatin 10 mg/day.

On rectal examination, mild enlargement of prostate gland, rubbery consistency and smooth surface was found. His prostate specific antigen (PSA) level was 6.2 ng/mL. He received alpha-blocker for relieving his symptom and appointment for magnetic resonance imaging (MRI) of prostate. After receiving mediction, clinical symptoms were slightly improved and MRI of prostate reported the peripheral zone of prostate shows no DWI restriction lesion. A large cystic lesion with internal haemorrhage, measuring about 8.1x8.1x7.1 cm, arising from right seminal vesicle. No definite fluid restriction is seen. The left seminal vesicle shows decreased signal due to obstruction. Pressure effect to the prostate and urinary bladder is seen as anterior displacement of urinarybladder and inferior displacement of the prostate gland (Figure 1). On pre-operative blood test, complete blood count, renal functions and electrolytes were normal.

Laparoscopic surgery was performed to remove the tumor. The first trocar (12 mm) was created at umbilicus as camera port, then the second and third (12- and 5-mm) working trocars were placed at mid clavicular line and below the umbilicus 3 cm on either side of the patient. The fourth 5-mm working trocar was inserted at right anterior axillary line below 2nd port 2 cm. The procedure started with identification of peritoneal ridge nearest to the rectovesical junction where an incision was made. Dissection of peritoneal reflexion was carried out until right vas deferens was found following through to right SV. SV tumor was identified posterior to the urinary bladder. The tumor capsule was completely mobilized. The tumor was not adhered to any surrounding structures. Tumor vessels were carefully secured with vessel sealing (Ligasure®). Specimen was removed with a bag (Figure 2). The estimated blood loss was 350 mL and a drain was placed at posterior urinary bladder space.

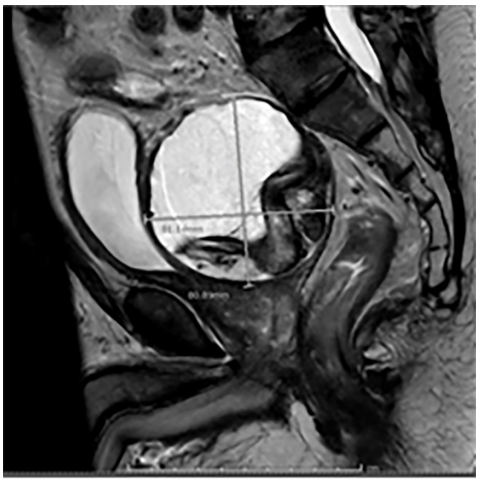

**Figure 1** Pre-operative sagittal magnetic resonance imaging demonstrated large cystic lesion with internal haemorrhage, measuring about 8.1x8.1x7.1 cm, arising from right seminal vesicle

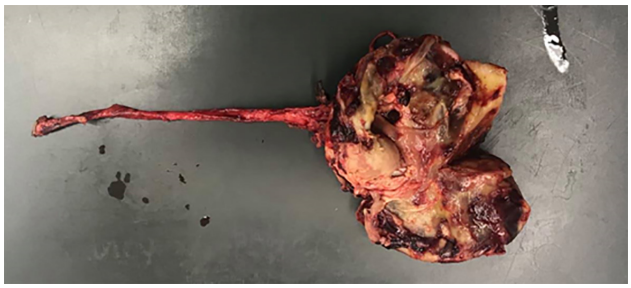

**Figure 2** Resected Left seminal vesicle neurilemmoma with the right vas deferens

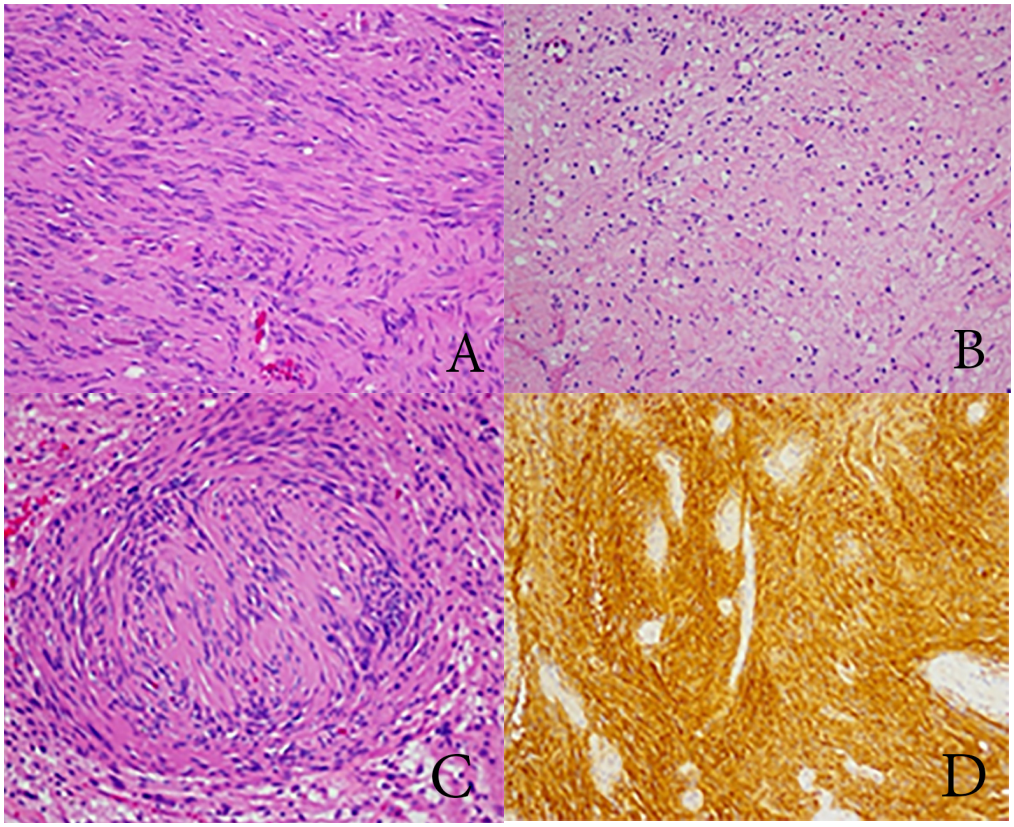


**Figure 3** Immunohistochemistry of left seminal vesical. (A, B) Well-differentiated Schwann cells. Compact Antoni A and loose Antoni B areas (C) Verocay body. (D) immunostraining with S100 protein showed diffuse and strong immunoreactivity

Pathology and immunohistochemical analysis demonstrated neurilemmoma arising from right SV. The histologic features of the tumor cells include highly cellular component (Antoni A) and Verocay bodies plus myxoid hypocellular component (Antoni B). Tumor was diffused and strong expression of S100 protein (Figure 3). No post-operative complications occurred. The patient was discharged on 7$^{th}$ postoperative day. Patient was scheduled for follow up every 3 months and re-imaging at 6 months after surgery. During follow-up period, no clinical symptoms nor sign of local recurrence were found. PSA level was 2.28 ng/mL. Imaging after operation was performed at 1 year, the result was negative (Figure 4) His LUTS improved, free of alpha-blocker.

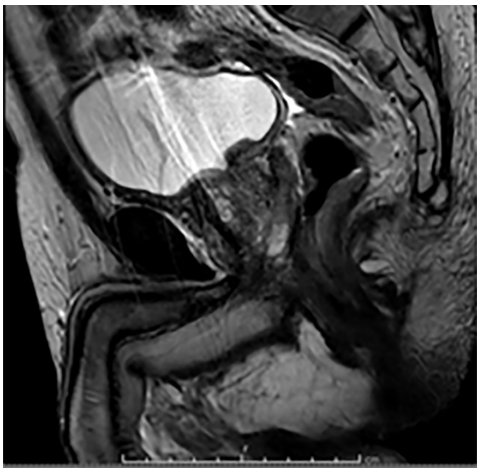

**Figure 4** Post treatment with surgical excision for 1 year sagittal magnetic resonance imaging demonstrated no recurrence at pelvis cavity

## DISCUSSION

Neurilemmoma is a rare peripheral nerves tumor usually occuring in young and middle aged adults. It is unusual in genitourinary system. Neurilemmoma may occur sporadically or associated with hereditary syndromes such as neurofibromatosis type 2, schwannomatosis or Carney complex.[4] There are only 10 cases of single seminal vesicle neurilemmomas reported in the literature.[3] Most of them showed patients with neurilemmoma of seminal vesicle without significant clinical symptoms. However, if surrounding organs are compressed by tumor, patients could develop clinical symptoms such as pain, LUTS, or hematospermia.[5,6]

Computed tomography and magnetic resonance imaging are good tools for evaluating size, location, local involvement and distant metastasis of the tumor. But images cannot identify malignant potency. Tissue sampling with transrectal ultrasound-guided biopsy is the only gold standard diagnostic investigation.[3,7]

Morphologic and immunohistochemical features differentiate the schwannomas from malignant peripheral nerve sheath tumors. The presence of Schwannian whorls, a peritumoral capsule, subcapsular lymphocytes, macrophage-rich infiltrates and the absence of fascicles favoured the diagnosis of cellular schwannoma, while the presence of perivascular hypercellularity, tumour herniation into vascular lumens and necrosis favour malignant. Ki-67 labelling indices ≥20.0% were highly predictive of malignant peripheral nerve sheath tumor.[8]

The treatment of choice was surgical excision. Open technique with transperitoneal approach was the most common approach in the past. Up to now, laparoscopic and robotic-assisted surgery were commonly used to remove SV tumor. This approach have advantages over open surgery in resection of SV tumor. It decreases the post-operative complications, shortents hospital stay and improves cosmetic outcomes.[7,9] Zhang et al.[10] reported conservative strategy of seminal vesicle schwannoma. They followed patients for 20 months with computed tomography scans, which showed no significant alteration to the lesion and no clinical progression. They also mentioned that conservative strategy may be an effective treatment option for asymptomatic patients. But The efficacy of conservative treatments for the benign seminal vesicle tumour is still unclear.[11]

The local recurrence of schwannoma in other organ has been reported and associated with incomplete excision, with the rate ranging from 16.0% to 54.0%.[12] Such patients should require follow-up for a period of at least 2 years.[7]

## CONCLUSION

Neurilemmoma of the seminal vesicle are extremely rare and mostly benign neoplasms. Schwannomas still need to be diagnosed by pathology because of the limitations of examination methods. Surgical excision is the treatment of choice for patients. The principle, the tumor should be thoroughly removed, and the surrounding organs, large vessels, and nerves should be maintained. There are various operative methods that can be chosen. Further study is necessary to determine the optimal therapy method in asymptomatic cases, of which patient preference and tumor size should be taken into consideration.

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