Annals of Case Reports & Reviews

Case Report

doi: 10.39127/2574-5747/ACRR:1000415
A LAMARA, et al. (2024) Annal Cas Rep Rev: 415

Large Schwannoma of the Hepatic Pedicle: Diagnostic and Surgical Challenges

Prof. Abdelhak LAMARA*, Dr. Nadjet BOUREGBA, Dr. Badreddine NINI, Dr. Sid Ahmed MEDJAHDI, Dr. Mounir GADDA, Dr. Mohamed BOUKHANE, And Dr. Khaled MASSAI. Rabeh OURDANE, Ryad BELKADI

Department of General Surgery. Regional Military, University Hospital of Constantine, Algeria.

***Corresponding author:** Professor Abdelhak LAMARA, Head of the Department of General Surgery, Regional Military University Hospital of Constantine, Algeria. BP 61 C Ali MENDJELI. Email: chir.hmruc @gmail.com/ lamaraabdelhak2000@yahoo.fr. Co-author(s) Emails: bouregbanadjette@gmail.com (NB); badronini8@gmail.com (BN) s.a.medjahdi@gmail.com (SAM) gaddamounir@gmail.com (MG); Mohamedboukhene@yahoo.fr (MB)

Contributing author: Meriam LAMARA, Peterborough, UK

Citation: A LAMARA, N BOUREGBA, B NINI, SA MEDJAHDI, M GADDA, et al. (2024) Large Schwannoma of the Hepatic Pedicle: Diagnostic and Surgical Challenges. Annal Cas Rep Rev: ACRR-415.

Received Date: October 10, 2024; **Accepted Date:** October 15, 2024; **Published Date:** October 21, 2024

Abstract

Introduction: *Nerve-origin tumors in the hepatic pedicle are extremely rare, with schwannomas being an atypical presentation. This case report illustrates the diagnostic and therapeutic challenges associated with such tumors.*

Case Description: *A 66-year-old male with no significant medical history was admitted for the management of a left hepatic mass. Clinical examination revealed a tender epigastric mass. Abdominal ultrasound and CT scan showed a heterogeneous hepatic mass of 17 cm, suspected to be hepatocellular carcinoma, with normal tumor markers. Intraoperative findings revealed a solid 20 cm tumor compressing adjacent structures. A cholecystectomy and complete excision of the mass, followed by vascular reconstruction, were performed.*

Results: *Postoperatively, the patient developed shock with hemorrhage, requiring reoperation. A compressive hematoma was evacuated, and hepatic artery anastomosis was redone, with good arterial flow confirmed via Doppler ultrasound. Histopathological analysis revealed a benign schwannoma.*

Discussion: *Retroperitoneal schwannomas, though rare, require appropriate surgical management. Diagnosis relies on histology and immunohistochemistry, and regular follow-up is crucial due to the risk of recurrence.*

Conclusion: *This case highlights the complexity of diagnosing and managing schwannomas of the hepatic pedicle, underscoring the importance of a multidisciplinary approach.*

Keywords: *abdominal mass, hepatic pedicle Schwannoma, vascular reconstruction.*

Introduction

Nerve-origin tumors in the hepatic pedicle are extremely rare. This report presents a complex case, both diagnostically and therapeutically.

Case Description

The patient is a 66-year-old male with no significant medical history who was admitted to our general surgery department for the management of a left hepatic mass. Clinical examination revealed a tender mass in the right hypochondrium and epigastric region. Abdominal ultrasound revealed a heterogeneous hepatic mass measuring 99 x 74 mm (Figure1a). Abdominal-pelvic CT showed a large heterogeneous mass of 17 cm in the left hepatic region, compressing the elements of the hepatic pedicle and suggesting hepatocellular carcinoma (Figure 1b). A follow-up CT two months later revealed a tissue mass occupying the left liver with partial necrosis, suggestive of hepatocellular carcinoma (HCC) or a degenerated macroadenoma with local vascular and pancreatic extension (Figure 1c). Tumor markers, including α-FP, CEA, and CA 19-9, were within normal limits.

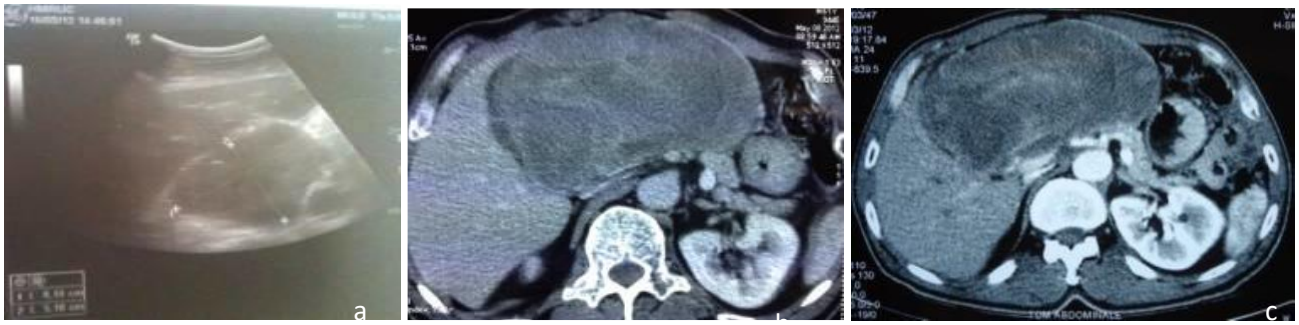

Figure 1: Morphology (a) Preoperative ultrasound: a heterogeneous liver mass of 99/74 mm. (b) Abdominal CT scan: left hepatic tumor mass of 17 cm. (c) CT scan of a partially necrotic mass of suspicious appearance left liver.

During surgical exploration, a solid, multilobular mass measuring approximately 20 cm was found occupying the subhepatic region. The tumor had close contact with the stomach, pancreas, and duodenum, displacing these organs downward and to the right, with evidence of coeliac lymphadenopathy. Exploration of the hepatic pedicle was challenging due to the tumor's volume and adherence to the pedicle structures, making the Pringle maneuver unfeasible. Consequently, we opted for suprapubic and inferior vena cava control, distant from the tumor, to enable progressive dissection and mobilization of the mass, allowing access and control of the hepatic pedicle. Complete excision of the mass was performed, which included resecting a portion of the invaded proper hepatic artery, followed by vascular reconstruction via an end-to-end anastomosis. Coeliac and hepatic lymph node dissection was also completed (Figures 2).

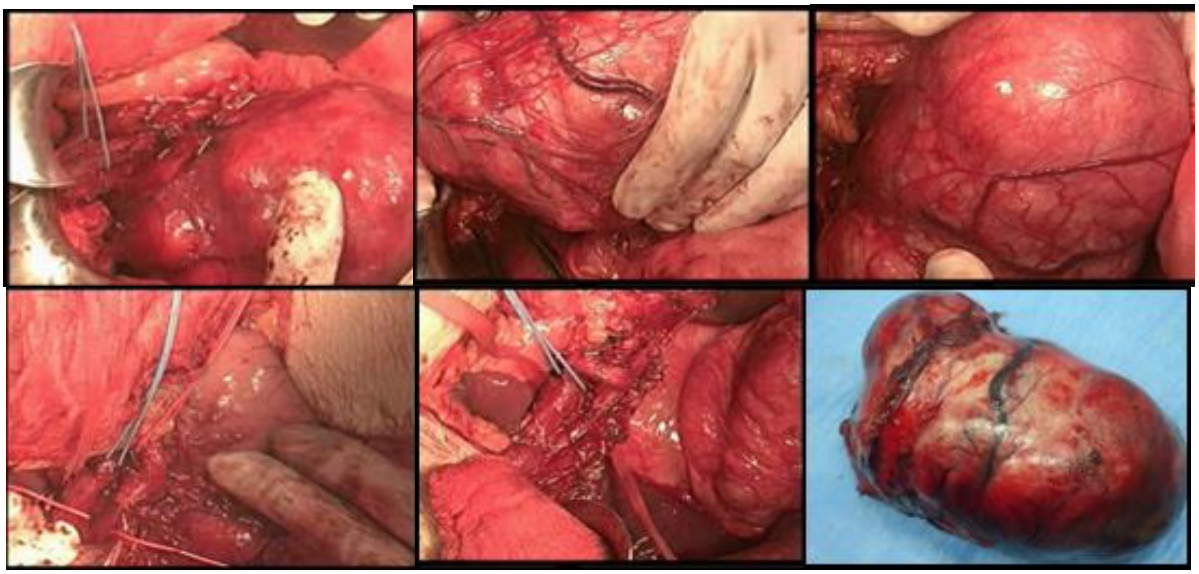

Figure 2: Intraoperative view.

Forty-eight hours postoperatively, the patient presented with shock, hypotension, and pale mucous membranes. His hemoglobin was 59 g/L, and his hematocrit was 17%. A CT scan revealed splenic and left hepatic infarctions with minor active bleeding from the common hepatic artery, a residual hydrohematoma at the operative site, and extrinsic compression of the portal vein. Surgical re-exploration revealed a compressive retroperitoneal and subhepatic hematoma, causing compression of the hepatic pedicle, hypoperfusion of the liver, and splenic nodules. Active venous bleeding from a branch of the posterior pancreaticoduodenal vein was identified and addressed (Figure 3).

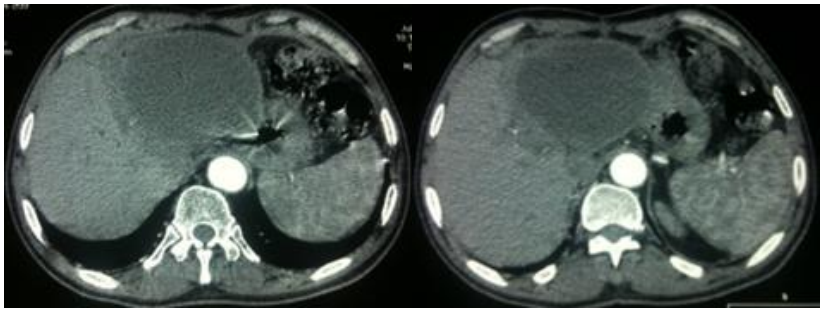

Figure 3: Postoperative D2 abdominal CT. (compressive hematoma; hypoperfusion of the liver).

Surgical procedures included evacuation of the hematoma, irrigation with warm saline to restore liver color, elective hemostasis of the venous bleeding, and reconstruction of the hepatic artery anastomosis. Intraoperative Doppler ultrasound confirmed satisfactory hepatic arterial flow. Postoperative recovery was uneventful, with no major complications.

Imaging Findings:

- Doppler Ultrasound: The hepatic artery was visible proximally, with homogeneous filling (Figure 4 a, b and c).

- Abdominal CT and Angiography: No signs of local recurrence were detected, although a liquefied hematoma was observed at the surgical site. The hepatic artery and portal vein appeared normal (Figure4 d and e).

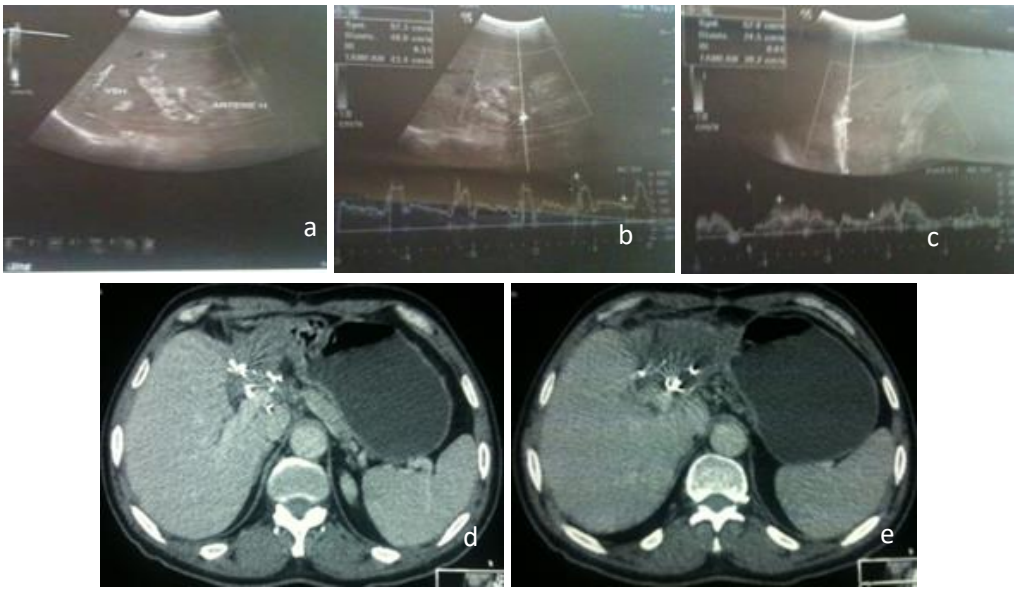

Figure 4: (a, b, c,) Postoperative D5 postoperative Doppler ultrasound. (d, e) Follow-up CT.

Histopathological Findings

Histological analysis revealed a benign schwannoma. Reactive coeliac lymphadenitis was noted, along with inflammatory changes in the gallbladder wall.

A workup for neurofibromatosis (NF) was performed. Small bowel transit and colonoscopy did not reveal any intestinal involvement. ENT examination and audiogram were normal, ruling out involvement of the eighth cranial nerve. Ophthalmologic evaluation showed no signs of palpebral plexiform neurofibroma or exophthalmos. Neurological and osteoarticular exams were unremarkable.

Discussion

Schwannomas of the hepatic pedicle are an exceedingly rare entity. These tumors, classified as connective tissue tumors, often exhibit cystic characteristics due to mucinous degeneration [1]. They may be benign or malignant. Multiple schwannomas are a diagnostic criterion for neurofibromatosis type 2 (NF2) [2].

Schwannomas are the most common tumors of peripheral nerves and can develop in various sites, including the limbs, neck, mediastinum, retroperitoneum, posterior spinal roots, and cerebellopontine angle. In the digestive tract, they primarily arise from Auerbach's plexus and less frequently from Meissner's plexus, presenting as encapsulated, slow-growing tumors. Retroperitoneal schwannomas, however, are very rare, accounting for approximately 3% of schwannomas and 0.5-1.2% of all retroperitoneal tumors [3]. They typically appear as well-defined, rounded or oval masses, with cystic or necrotic changes. While most of these tumors are benign, some may become malignant, especially in association with neurofibromatosis.

The main challenge lies in determining the benign or malignant nature of these tumors. Malignancy is confirmed only by evident signs of hematogenous spread (usually to the liver) or direct extension to adjacent organs. Unfortunately, histological criteria alone may be insufficient for precise diagnosis. Nonetheless, histological diagnosis has greatly benefited from advances in immunohistochemistry [4].

The gold standard treatment remains complete surgical excision of the tumor. Although recurrence and malignant transformation are rare postoperatively, annual follow-up with CT is recommended [5].

Conclusion

Schwannomas of the hepatic pedicle are extremely rare tumors. The diagnosis can only be confirmed postoperatively through histopathological and immunohistochemical analysis, highlighting the importance of a multidisciplinary approach to managing these lesions.

References

1. Aydin S, Kocaeli H, Sen O, Yildirim U, Tekin M. Hepatic schwannoma: a case report. *Journal of Medical Case Reports*.2008; 2 (1):179. DOI: 10.1186/1752-1947-2-179.
2. Le Guellec S, Attyé A, Bringuier PP. Schwannoma and neurofibroma : Clinicopathologic and molecular features, imaging and management. *Bulletin du Cancer*. 2020;107(2):204-212. DOI:10.1016/j.bulcan.2020.01.010.
3. Pilavaki M, Chourmouzi D, Kiziridou A, Skordalaki A, Zarampoukas T, Drevelengas A. Imaging of peripheral nerve sheath tumors with pathologic correlation: pictorial review. *European Journal of Radiology*. 2004;52 (3):229-239. DOI:10.1016/j.ejrad.2004.03.017.
4. Nishio J. Contributions of immunohistochemistry to the diagnosis of soft tissue tumors. *International Journal of Clinical and Experimental Pathology*. 2013; 6(7):1333-1341.
5. Chourmouzi D, Boulogianni G, Drevelengas A, et al. Retroperitoneal schwannoma: Case report and review of the literature. *Hippokratia*. 2013; 17(1):87-90.