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Unraveling the Enigma: Schwannoma of the Sigmoid Colon-A Rare Clinical Odyssey

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ABSTRACT:

Schwannomas are rare, benign tumors originating from Schwann cells in the peripheral nervous system. Although common in peripheral nerves, they seldom occur in the gastrointestinal tract, particularly in the sigmoid colon. This study examines a unique case of sigmoid colon schwannoma in a 45-year-old female diagnosed after experiencing abdominal discomfort. Surgical removal confirmed the diagnosis, highlighting the challenges in diagnosing these rare tumors that can mimic other gastrointestinal cancers. Understanding their clinical presentation and employing appropriate diagnostic methods is crucial for accurate diagnosis and effective management, emphasizing the importance of considering schwannomas in sigmoid colon tumor differential diagnoses for timely intervention and improved patient outcomes.

Keywords: Schwannomas, benign neoplasms, sigmoid colon, radiological, histopathological.

1. Introduction

Schwannomas arise from Schwann cells and are typically found along peripheral nerves in various parts of the body. However, their occurrence in the colon and rectum is exceptionally rare[1]. These tumors constitute a small percentage (2-6%) of all mesenchymal tumors and are equally prevalent in both men and women, typically affecting individuals between 60 and 65 years old[2]. Due to the limited number of reported cases, the complete understanding of this tumor's characteristics is still lacking[3]. Immunohistochemistry is the primary diagnostic method for identifying these tumors. When located in the colon or rectum, complete surgical removal with wide margins is essential to prevent local recurrence or malignant transformation if left untreated. The surgical approach depends on factors such as tumor size, location, and histopathological features[3]. The effectiveness of radiotherapy or adjuvant chemotherapy is inconclusive, and these treatments are not recommended as standard practice. This study presents an unusual case of a schwannoma discovered in the ascending colon through colonoscopy and abdominal computed tomography (CT) scans, necessitating surgical resection.

Schwannomas, rare tumors originating from Schwann cells, usually develop in the head, neck, arms, and limbs. In the colon and rectum, unrelated to von Recklinghausen's disease, they are exceptionally rare (2-6% of digestive tract stromal tumors) with around 50 reported cases worldwide [4]. These tumors are often asymptomatic but can cause nonspecific symptoms like pain, fatigue, fever, rectal bleeding, and colonic obstruction[1]. While most are benign, malignant transformation is possible, often related to tumor size. Surgical removal with clear margins is the preferred treatment, as chemotherapy and radiotherapy effectiveness is uncertain. Despite aggressive surgery, local recurrence and malignancy can still occur, leading to limited treatment options and poor prognosis[5].

Case study

A 45-year-old female presented to our outpatient department with a three-month history of intermittent fever, chills, nausea, vomiting, decreased appetite, and weight loss. The patient denied any gastrointestinal or general symptoms. Patient had no previous history of diabetes mellitus, hypertension, bronchial asthma or thyroid disorders. The patient underwent hysterectomy 28 years ago. She reported having a balanced diet, regular sleep, and normal bowel and bladder habits. She denied any substance abuse.

On examination, the patient appeared healthy with no signs of pallor, icterus, clubbing, lymphadenopathy, jaundice, or cyanosis. Abdominal examination revealed a soft abdomen without tenderness, palpable swelling or any organ enlargement. Tympanic resonance was noted on percussion, and bowel sounds were audible in all four quadrants. Abdominal and pelvic ultrasound indicated a rounded hypoechoic mass within the intestine, likely originating from the sigmoid colon in the infraumbilical region.

CECT Pelvis and Abdomen

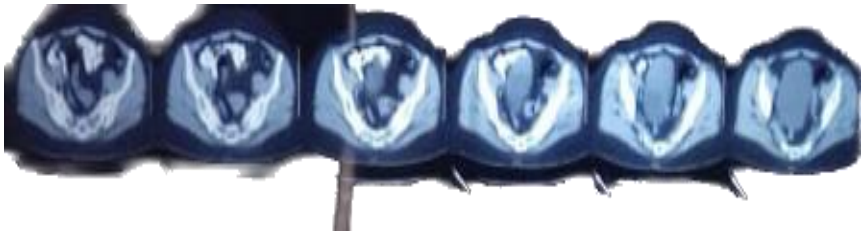

Figure: 1 Schwannomas

There is a clearly outlined oval-shaped mass measuring 27x25x26mm on the posterior wall of the sigmoid colon. The mass does not display any signs of calcification. Contrast material was observed flowing past the lesion in a downward direction. A consistent layer of fat appears to envelop the lesion and nearby tissues, indicating a possible malignant condition resembling a schwannoma.
Colonoscopy was performed, and the findings indicated: Submucosal mass lesion in the sigmoid colony.

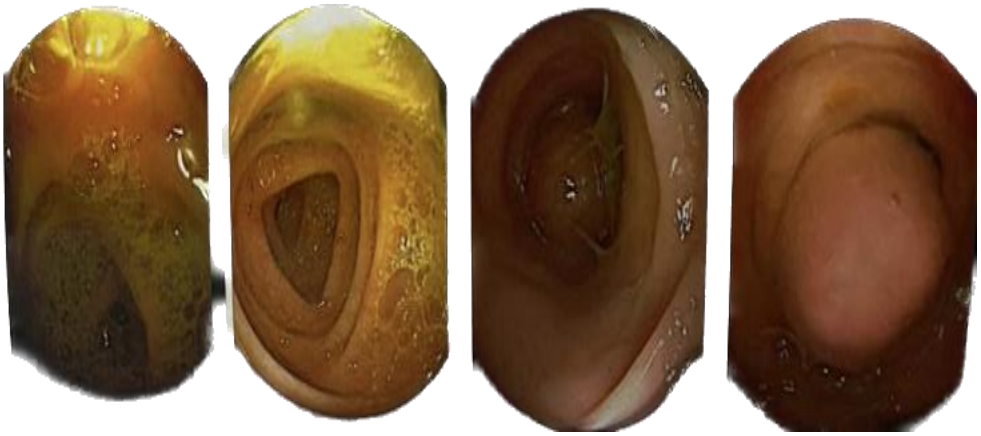

Figure: 2 Showing Sigmoid colon has a submucosal mass lesion

Following the completion of all necessary laboratory investigatios, the patient underwent a sigmoidectomy with resection and anastomosis. Hemostasis was successfully attained during the procedure, which proceeded without any complications. Subsequently, the patient was discharged in a symptom-free state.

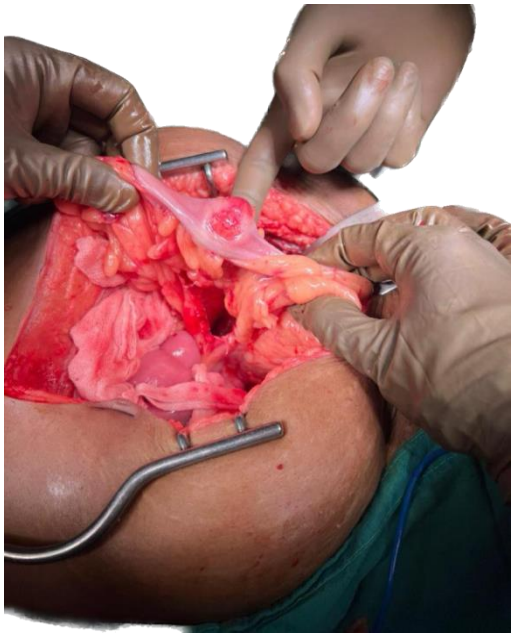

Figure: 3 Sigmoidectomy

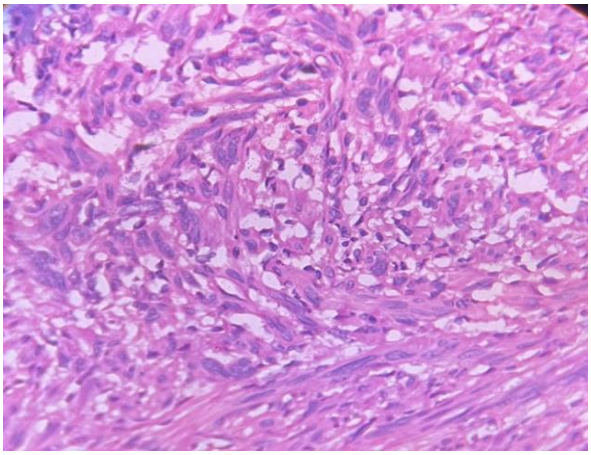

Figure: 4 Hematoxylin & Eosin stained 40X photomicrography shows normal colonic mucosa

Histopathological analysis of the colonic polyp displayed normal colonic mucosa in Hematoxylin and Eosin stained 40X photomicrographs. The underlying tumor consisted of interlacing fascicles of plump spindle-shaped cells with eosinophilic muscularis cytoplasm, vesicular nuclei, and inconspicuous propria displaying nucleoli.

2. Discussion

In our present study, a 45-year-old female presented with complaints of abdominal mass, intermittent fever and weight loss. Ultrasound revealed a sigmoid colon mass, suspected to be a Schwannoma. Colonoscopy confirmed the mass, leading to sigmoidectomy. Histopathological analysis showed spindle-shaped cells consistent with patient recovered well after surgery.

Schwannomas were first described by Verocay in 1910 documented by Baek et al., (2013)[3]. Despite an increasing number of mesenchymal tumor reports with advanced immunohistochemical staining techniques, primary colon and rectum schwannomas not linked to neurofibromatosis (von Recklinghausen disease) are exceedingly rare concluded by Daimaru et al., (1998)[4] and Nonose et al., (2009)[6]. Due to the limited number of such cases, the full understanding of schwannoma incidence rates and characteristics remains incomplete. Schwannomas, benign neoplasms of ectodermal origin, are known for their slow growth and potential for malignant transformation if left untreated as indicated in previous studies [4,6,7]. These growths commonly appear as polyps, leading to mucosal ulcers, as reported by Kwon et al. (2002)[8] and Tanaka et al. (2011)[9]. This can give rise to nonspecific symptoms like abdominal pain, rectal bleeding, challenges in bowel movements, colonic obstruction, or invagination [10,11]. The imaging results lack specificity; CT scans reveal clearly defined, consistent mural masses, facilitating the distinction from diverse masses.[12]

Accurate histological diagnosis mandates an assessment of the Ki-67 proliferative index (MIB-1) since its positivity (≥5%) is closely linked to heightened tumor aggressiveness. A mitotic activity rate exceeding five mitoses per field under high magnification and a tumor size exceeding 5 cm are indicators associated with a significant risk of metastasis and recurrence. Conversely, benign lesions are characterized by a low mitotic rate, the absence of atypical mitotic figures, and nuclear hyperpigmentation.[5]

Performing pre-operative biopsy examinations can be challenging necessitating immunohistochemistry for precise schwannoma diagnosis. Presently, complete surgical resection with an oncologically radical approach is considered the gold standard for

schwannoma treatment. Based on our experience, we recommend radical surgery as the optimal treatment, even in cases where lymph nodes are not involved.

3. Conclusion

Schwannomas of the sigmoid colon are indeed rare clinical entities, making their diagnosis and management a challenging journey for both patients and healthcare professionals. In conclusion, the case of a sigmoid colon schwannoma represents a unique clinical odyssey characterized by its uncommon occurrence and the intricate diagnostic process involved. Managing schwannomas of the sigmoid colon requires a comprehensive approach, including meticulous diagnostic methods, careful surgical planning, and long-term follow-up to monitor for any signs of recurrence. Through continued research and collaborative efforts healthcare professionals can enhance their knowledge and improve the outcomes for patients experiencing this rare clinical condition.

4. References

1. Zippi M, Pica R, Scialpi R, Cassieri C, Avallone EV, Occhigrossi G. Schwannoma of the rectum: A case report and literature review. World Journal of Clinical Cases: WJCC. 2013 Apr 4;1(1):49.
2. Miettinen M, Sarlomo-Rikala M and Lasota J: Gastrointestinal stromal tumours. Ann Chir Gynaecol. 87:278–281. 1998.
3. Baek SJ, Hwangbo W, Kim J, Kim IS. A case of benign schwannoma of the ascending colon treated with laparoscopic-assisted wedge resection. International Surgery. 2013 Oct 1;98(4):315-8.
4. Nonose R, Lahan AY, Santos Valenciano J, Martinez CA. Schwannoma of the colon. Case Reports in Gastroenterology. 2009 Sep 22;3(3):293-9.
5. Fotiadis CI, Kouerinis IA, Papandreou I, Zografos GC, Agapitos G. Sigmoid schwannoma: a rare case. World journal of gastroenterology: WJG. 2005 Aug 8;11(32):5079.
6. Daimaru Y, Kido H, Hashimoto H, Enjoji M. Benign schwannoma of the gastrointestinal tract: a clinicopathologic and immunohistochemical study. Human pathology. 1988 Mar 1;19(3):257-64.
7. Nonose R, Lahan AY, Santos Valenciano J, Martinez CA. Schwannoma of the colon. Case Reports in Gastroenterology. 2009 Sep 22;3(3):293-9.
8. Lauwers GY, Erlandson RA, Casper ES, Brennan MF, Woodruff JM. Gastrointestinal Autonomic Nerve Tumors A Clinicopathological, Immunohistochemical, and Ultrastructural Study of 12 Cases. The American journal of surgical pathology. 1993 Sep 1;17(9):887-97.
9. Kwon MS, Lee SS, Ahn GH. Schwannomas of the gastrointestinal tract: clinicopathological features of 12 cases including a case of esophageal tumor compared with those of gastrointestinal stromal tumors and leiomyomas of the gastrointestinal tract. Pathology-Research and Practice. 2002 Jan 1;198(9):605-13.
10. Tanaka T, Ishihara Y, Takabayashi N, Kobayashi R, Hiramatsu T, Kuriki K. Gastrointestinal: Asymptomatic colonic schwannoma in an elderly woman; a rare case. Journal of gastroenterology and hepatology. 2011 Aug;26(8):1339-.
11. Martínez Crespo JJ, García Pérez B, Vicente JJ, Pérez Guillermo M, González Costea R. Manifestación atípica de una lesión infrecuente: vídeo y ecoendoscopia de un schwannoma gástrico. Revista Española de Enfermedades Digestivas. 2005 Nov;97(11):844-5.

12. Kim HJ, Kim CH, Lim SW, Huh JW, Kim YJ, Kim HR. Schwannoma of ascending colon treated by laparoscopic right hemicolectomy. World Journal of Surgical Oncology. 2012 Dec;10(1):1-4.
13. Levy AD, Quiles AM, Miettinen M, Sobin LH. Gastrointestinal schwannomas: CT features with clinicopathologic correlation. American Journal of Roentgenology. 2005 Mar;184(3):797-802.