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Case Report

Rare meets routine: A case of sessile serrated lesion presenting as acute appendicitis

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Abstract

Sessile serrated lesions (SSLs) are rare premalignant neoplasms usually arising in the colon but can also occur in the appendix, where their presentation often mimics acute appendicitis. We report the case of a 68-year-old male who presented with right lower abdominal pain and imaging findings suggestive of acute appendicitis with appendicular mucocele. The patient underwent appendectomy, and histopathological examination of the resected specimen revealed a sessile serrated lesion with marked dysplasia, without evidence of adenocarcinoma. Appendiceal SSLs are seldom reported in literature and may be overlooked due to their nonspecific clinical and radiological features. As SSLs are important precursors of colorectal carcinoma via the serrated neoplasia pathway, meticulous histopathological evaluation is crucial for accurate diagnosis. Early recognition, surgical excision, and colonoscopic follow-up can help prevent malignant transformation. This case adds to the limited literature on appendiceal SSLs and emphasizes the need for increased awareness and documentation.

Keywords: Sessile serrated lesions, Acute appendicitis, Pre malignant lesions.

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1. Introduction

Neoplasms of appendix are uncommon; among the gastrointestinal malignancies with an Incidence of 0.4%.[1] The patient may present with non-specific symptoms like pain abdomen pointing towards a routine diagnosis of Acute Appendicitis. It is critical to detect SSLs but lack of consistent identification by endoscopists and pathologists can make it challenging.[2] The aforementioned report is a case of sessile serrated lesions presenting as Acute Appendicitis.

2. Case Report

A 68-year-old male presented with chief complaints of pain in right lower abdomen since one month and shortness of breath of gradual onset since two weeks. The patient did not complain of fever, cold, decreased appetite or significant sudden loss of weight.

The patient had undergone mesh therapy for umbilical hernia 10 years back and PTCA-percutaneous transluminal coronary angioplasty 5 years back. He is a known diabetic and hypertensive for which he has been taking medications and a tobacco user for 30 years.

A head-to-toe surgical examination was conducted. Baseline vital parameters were elicited as follows: - Pulse rate-65/min, respiratory rate-18/min, blood pressure-110/70mmHg. On inspection the umbilicus and skin at McBurney's point appeared normal. The scar of hernial surgery was visible below the umbilicus. No visible dilation of veins was noted. On palpation tenderness of right lower quadrant of abdomen was elicited. The patient was advised ultrasound examination (**Figure 1**) which noted an inflamed

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appendix of diameter 12mm with adjacent mesenteric inflammation suggestive of acute appendicitis. A Computed tomography (CT) scan of abdomen-pelvis was conducted which noted an increased caliber of appendix with diameter of 23 mm and lumen filled with fluid suggestive of appendicular mucocele.

With written consent the patient underwent Appendectomy and the excised appendix specimen was sent for biopsy. Entire appendix, was submitted with gross specimen (**Figure 2**) admeasuring 5cm x 3cm x 2cm with mass of fat attached; the cut section revealed lumen filled with mucoid-like material after the preliminary diagnosis of sessile serrated lesion with evidence of dysplasia to look for adenocarcinoma of colon. However, no such foci were identified in the entire specimen, thus confirming a final diagnosis of sessile serrated lesion with marked dysplasia.

Histopathological examination of the lesion revealed presence of diffuse mucosal hyperplasia of glands having saw toothed appearance (**Figure 3**a) and a marked dysplasia of epithelium (**Figure 3**b) seen in the basal layer, however no significant mitotic activity was seen, Indicative of sessile serrated lesion of appendix with marked dysplasia.

Figure 1: Inflamed appendix of diameter 12mm with adjacent mesenteric inflammation

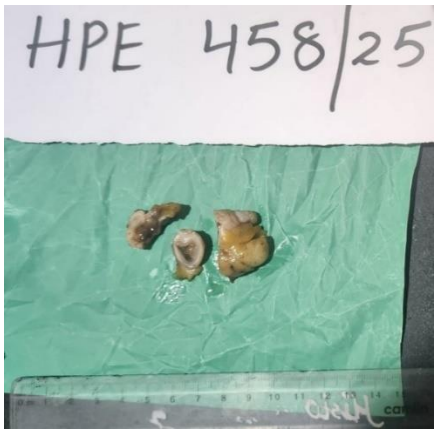

Figure 2: gross specimen - 5cmx3cmx2cm with mass of fat attached; cut section revealed lumen filled with mucoid-like material

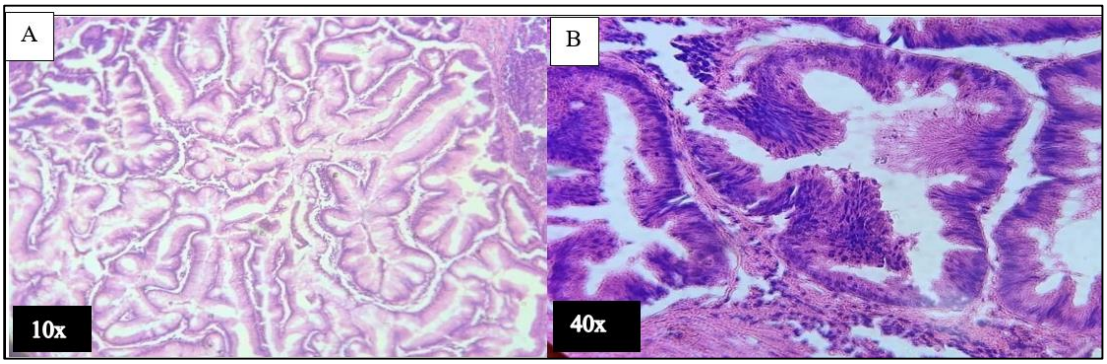

Figure 3: Histopathology [HPE:458/25] **a):** Hyperplasia of glands (H&E); **b):** Saw-toothed appearance with marked dysplasia (H&E)

Table 1: Previous documented cases of SSL presenting as acute appendicitis

S. No.	Author	Year	Patient Age/Sex	Histopathology (HPE)
1.	Barut SG, et al[9]	2020	57 years/ Female	Pus in the appendix lumen, deep lesion with mucin-rich serrated proliferations towards the surface in the mucosa, and basal parts consisting of T and L shaped crypt structures, and inflammatory infiltration
2.	Dargent JL et al[4]	2021	15 years/ Female	Distorted crypts with deep crypt serrations and basal crypt dilation with horizontal growth along the muscularis mucosae.
3.	Present Case	2025	68 years/Male	Presence of diffuse mucosal hyperplasia of glands having saw toothed appearance and a marked dysplasia of epithelium

3. Discussion

The 2019 World Health Organization (WHO) classification of tumors of the digestive system (5th edition) introduced the term "sessile serrated lesion" (SSL) to replace the term "sessile serrated adenoma/polyp" (SSA/P).[2] Colonic SSLs are usually focused in medical literature but these lesions can also occur in appendix and are believed to follow a similar pathway. Usually the crypts display irregular, dilated, or branching patterns with a likelihood of horizontal extension along their base. Most cases present as 'Boot; 'L', or 'T' shaped. SSLs diagnosed are differentiated from benign hyperplastic polyps on the basis of aforementioned basal distortion.[3] Dargent JL et al. has reported a similar case of SSL in a teenage girl in which they described its pathological and molecular findings. Their findings indicate that appendiceal SSL may occur in young patients such as teenagers and also confirm further that *BRAF* V600E mutation may be found in a subset of these neoplastic lesions.[4] Due to limited research and lack of dedicated studies the association between tobacco and SSLs remains uncertain. Tobacco may contribute to development of SSLs in colon by influencing molecular pathways which sets the stage for epigenetic and oncogenic mutations as pointed out by few studies.[5] During our literature review we came across limited cases of SSL within the appendix. The most common presentation of appendiceal lesions is acute appendicitis and it is only after appendectomy and subsequent Histopathological studies that it is confirmed as a SSL. In cases without angiolymphatic invasion (low grade) its management is sufficed by means of appendectomy. It is important to perform colonoscopy to rule out synchronous or residual lesions.[1] Studies have pointed out that 20 to 30 % of colorectal carcinomas arise from SSLs via the serrated neoplasia pathway, which makes it a critical precursor to colorectal cancer.[6] These lesions are difficult to detect and classify with high chances of residual lesion in spite of optimum surgery.[7] Its early excision ensured it didn't progress to a full-blown malignancy thus significantly reducing the patient morbidity and leading to favorable outcome.

The relative incidence of sessile serrated lesions in general population is estimated to be around 13.8%, Among these, the majority of SSLs detected were detected in the right colon (65.1%) followed by left colon (32%).[8] Given the limited studies and research on Sessile serrated lesions (SSL) in the appendix, further studies are necessary to determine its incidence rate, highlighting the need for enhanced screening, detection, and documentation of such cases.

PUBMED search revealed only 2 cases of SSL in appendix documented. Thus, we present a comparison of the present case with the published cases. Sessile serrated lesion cases in appendix may get dismissed as usual appendicitis presentation without meticulous study conducted by trained professionals, that is why we want to emphasize on further need of documentation of these cases for better patient care and personnel training.

4. Conclusion

In conclusion, up until the excision biopsy, the diagnosis pointed towards Acute Appendicitis unless microscopic examination proved otherwise. Therefore, it is rather essential to have meticulous histopathological examination and always be prepared to expect a rare diagnosis in spite of routine presentation. However, there is a need for further studies and Research to document causal relationship between tobacco and SSL.

5. Author Contributions

1. Ali SM: Conceptualization, execution of report, drafting, writing.
2. Masood MA: Conceptualization, execution of report, drafting, writing, correspondences.
3. Tazeen N: drafting, critical reviewing, formal analysis, data acquisition.
4. Tabassum A: critical reviewing, formal analysis.
5. Afroze IA: critical reviewing.
6. Begum A: critical reviewing.
7. Ali SAM: Assisted in work execution, Critical reviewing.

6. Source of Funding

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7. Conflict of Interest

No conflict of interest.

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