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A Rare Case of Crohn's Disease Associated with Peutz-Jeghers Syndrome

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

In this report, we present a case of a 28-year-old female patient who had both Peutz-Jeghers syndrome and Crohn's disease. Peutz-Jeghers syndrome is a rare genetic disorder with autosomal dominant transmission characterized by the association of hamartomatous polyposis and cutaneous mucosal pigmented macules predominantly around the mouth and on the lips. Its incidence is approximately one in every 50,000 people. Crohn's disease, on the other hand, is a chronic inflammatory bowel disease that progresses to intestinal destruction, and its incidence is on the rise. We believe this case to be the fourth documented case in the world of Peutz-Jeghers syndrome coinciding with Crohn's disease. The association between PJS and Crohn's disease is infrequent. The risk of malignancy, especially digestive cancer, is the common point between these two pathologies. Screening is most important. The risk of extra digestive neoplasia in the context of PJS makes the therapeutic management of Crohn's disease more difficult.

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1. INTRODUCTION

Peutz-Jeghers syndrome (PJS) is a rare genetic disorder with autosomal dominant transmission characterized by the association of hamartomatous polyposis and cutaneous mucosal pigmented macules predominantly around the mouth and on the lips [1].

PJS hamartomatous polyps are most frequently observed in the small intestine, particularly in the jejunum, ileum, and duodenum. However, they can also manifest in the stomach, large bowel, and, in uncommon cases, extraintestinal sites like the bronchus, renal pelvis, and urinary bladder. The diagnosis of PJS is established by two out of three criteria: a family history of the condition, multiple pigmented macules on the mucous membranes and skin, and hamartomatous intestinal polyps [2].

The complications of PJS are dominated by intussusception during childhood, an increased risk of developing gastrointestinal (GI) cancer, and a wide variety of non-GI malignancies in adulthood. The incidence of cancer in PJS is 15 times greater than in the general population [3].

Crohn's disease is a chronic inflammatory bowel disease that progresses to intestinal destruction, and the incidence is constantly increasing.

The association between these two disorders is infrequent; three cases have been described worldwide.

Through this work, we reported a new case of an association between PJS and Crohn's disease.

2. PRESENTATION OF CASE

We diagnosed a 28-year-old female patient with Peutz-Jeghers syndrome (PJS) at the age of 16, which was initially revealed by intestinal invagination. The diagnostic criteria included a familial background, with her sister being followed for PJS, perioral pigmented macules observed on her toes and fingers, and the presence of hamartomatous polyposis identified in the small intestinal resection specimen. The patient underwent surgery twice for intussusception and had a total intestinal resection of 162.5 cm, with no post-operative complications. Ten years later, the patient consulted due to Koenig's syndrome. Upon physical examination, there was mild tenderness to palpation of the abdomen. There were no signs of abdominal guarding, rebound tenderness or palpable masses. The patient did have mucocutaneous hyperpigmentation on her upper and lower lips, as shown in Fig. 1.

She underwent a colonoscopy, revealing discontinuous areas of ulceration and nodular lesions, as depicted in Fig. 2. Histological examination indicated inflammatory expansion of the lamina propria with basal lymphoplasmacytosis, deep fissuring ulcers, and a crypt abscess consistent with inflammatory bowel disease (IBD). Additionally, an enteric MRI showed small bowel and colonic polyps consistent with her condition.

We have diagnosed Crohn's disease (classified as A2L2B1 according to the Montreal classification) associated with Peutz-Jeghers syndrome (PJS).

Esophagogastroduodenoscopy (EGD) revealed multiple gastric polyps, as illustrated in Fig. 3.

Fig. 1. Multiple hyperpigmented spots located on lips

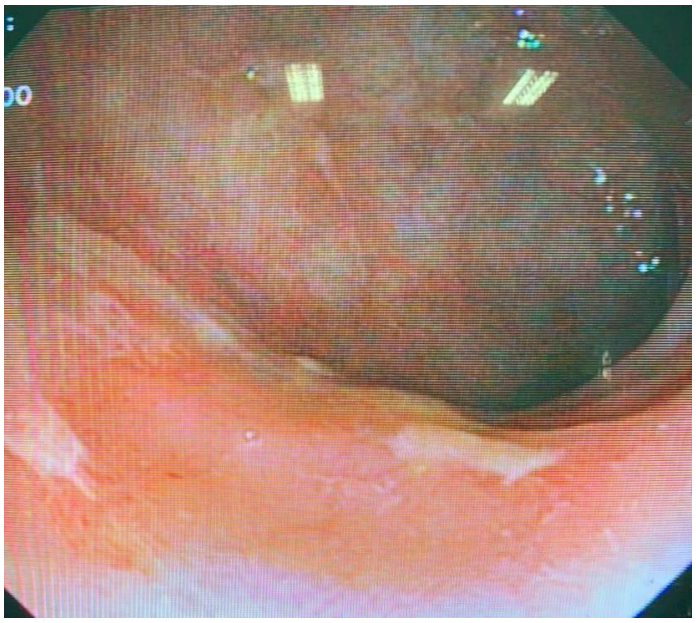

Fig. 2. Colonoscopy revealing discontinued areas of ulceration

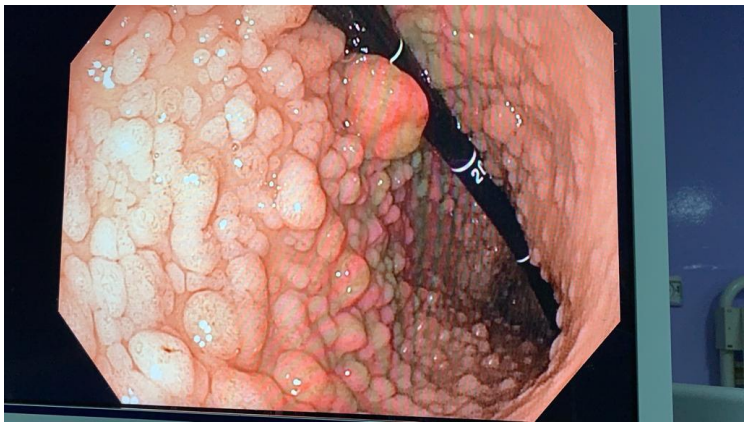

Fig. 3. Esophagogastroduodenoscopy (EGD) showing multiple gastric polyps

For therapeutic management, we placed the patient on steroids and five aminosalicylic acids (5-ASA). The evolution was marked by the occurrence of several flares (CDAI at 230) treated with short courses of steroids because using immunosuppressant agents in this context would expose the patient to a higher risk of malignancy.

3. DISCUSSION

Our literature review uncovered revealed only three other published cases of Crohn's disease occurring in patients with Peutz-Jeghers syndrome (PJS): in 1984, in Germany, in a 12-year-old patient [4]; in 2013, in South Korea, in a 30-year-old patient [5]; and 2020, in London, in an 18-year-old patient [6].

Clinically, the emergence of symptoms such as diarrhea, abdominal pain, or gastrointestinal bleeding in a patient with Peutz-Jeghers syndrome (PJS) may erroneously suggest a complication of PJS itself. Hence, it is crucial to undergo endoscopic explorations to rule out another diagnosis. Peutz-Jeghers syndrome is a rare autosomal dominant disorder linked to germline mutations in the serinethreonine kinase STK11 gene, a tumor suppressor gene located on the short arm of chromosome 19 [7].

It combines highly suggestive cutaneous clinical signs, such as periorificial lentiginosis and hamartomatous polyps in the digestive tract. The polyps can be located anywhere in the gastrointestinal tract but are preferentially found

in the small intestine (70-90%), colon (50%), and stomach (25%) [8].

Peutz-Jeghers syndrome (PJS) predisposes individuals to the occurrence of numerous cancers, mainly digestive but also extra-digestive (gynecological, breast, gonadal, and pulmonary). These cancers often appear early [9] and are predominantly found in females. Assessing tumor risks in Peutz-Jeghers syndrome (PJS) can be challenging due to its rarity and the variability of available data in the literature. A multicentric study [10] estimates the risk of developing digestive cancer at nine percent at the age of 40 and 33% at the age of 60. According to the Italian Association for the Study of Familial and Hereditary Gastrointestinal Tumors [11], the cumulative risk of developing gastrointestinal cancer is seven percent at 40, 20% at 50, 44% at 60, and 55% after the age of 65.

This condition is severe and significantly increases the risk of cancer throughout life, particularly when associated with other predisposing conditions such as Crohn's disease, as seen in the case of our patient.

Based on recent recommendations, individuals with PJS should undergo baseline oesophagogastroduodenoscopy and colonoscopy at eight. Surveillance intervals of one to three years are 3 of 5 recommended if these exams reveal polyps. Routine surveillance should start at 18 if no lesions are found in endoscopy [12]. The risk of colorectal cancer in inflammatory bowel disease is significant, particularly with extensive colitis evolving for at least ten years [13].

Thus, prevention and screening for colorectal cancer in this category of patients is essential. The endoscopic assessment of screening for malignancy in our patient did not reveal any lesions. Peutz-Jeghers syndrome exposes to a significant risk of extra digestive cancers, particularly gynecological. Hearle et al. [10] evaluate the risk of breast cancer at eight percent at the age of 40 and 31% at the age of 60, but it appears to be higher for other authors. The drugs used in inflammatory bowel disease (IBD), with their immunosuppressive effects, promote the occurrence of cancers and lymphomas in the long term, increasing the risk of malignancy in patients affected by the two pathologies. During follow-up, our patient presented mild to moderate flares treated by short courses of steroids.

The association between Peutz-Jeghers syndrome (PJS) and Crohn's disease poses a significant risk of extensive intestinal resection due to complications such as invaginations, obstructions from polyps in PJS, or the development of fistulas and strictures in Crohn's disease. In our case, the patient underwent a resection of 162.5 cm following two episodes of intestinal invaginations. The inability to administer background treatment for Crohn's disease exacerbates the risk of requiring more extensive intestinal resection in such patients.

4. CONCLUSION

The association between PJS and Crohn's disease is infrequent. Our bibliographic research revealed only three other published cases. The common point between the two pathologies is the risk of malignancy, especially digestive cancer, hence the importance of screening. The risk of extra digestive neoplasia in the context of PJS makes the therapeutic management of Crohn's disease more difficult.

For our case, the association between Crohn’s disease and PJS prevented us from considering a treatment with immunosuppressive. Therefore, our treatment consisted of short courses of steroids.

CONSENT

All authors declare that ‘written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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