CASE PRESENTATION

Peutz–Jeghers Syndrome

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ABSTRACT

This report describes a case of Peutz-Jeghers syndrome in a 17-year-old Bahraini male patient who presented with recurrent attacks of abdominal pain with distinctive melanin pigmentation of the lips, buccal mucosa, palms of the hands and soles of the feet. This was associated with iron deficiency anaemia and multiple hamartomatous polyps in the gastro-intestinal tract.

The main purpose of this communication is to draw the attention of the clinician to the existence of this condition in Bahrain and to stress the clinical features, the radiological findings and the pathological diagnosis.

Peutz–Jeghers syndrome is an uncommon familial disease manifested by intestinal polyposis and melanin spots of the oral mucosa, lips, palms of the hands and soles of the feet. Inheritance is as a simple mendelian dominant. Both males and females carry the factor, and there is a high degree of penetrance. A single pleotropic gene is responsible for both the polyps and melanin spots. We present a first reported case of Bahraini patient with Peutz-Jeghers syndrome who has long history of recurrent abdominal pain and iron deficiency anaemia.

THE CASE

A 17-year-old male Bahraini patient was admitted to Salmaniya Medical Centre with history of recurrent attacks of central crampy abdominal pain and vomiting for ten years. There was no history of rectal bleeding or melena. Physical examination revealed a pale thin patient in moderate distress from abdominal pain. There was a distinctive melanin pigmentation of the lips (Fig 1), buccal mucosa, palms of the hands and soles of the feet (Fig 2). The pigmentation was characterized by multiple, flat, ovoid, 2–3 mm brown-black colour. The abdomen was soft, with active high pitched bowel sounds. The stool on rectal examination was brown and tested positive for

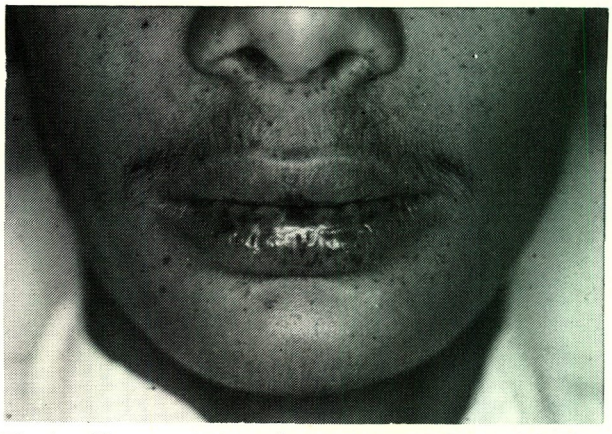

Fig 1. *Characteristic melanin pigmentation of the lips*

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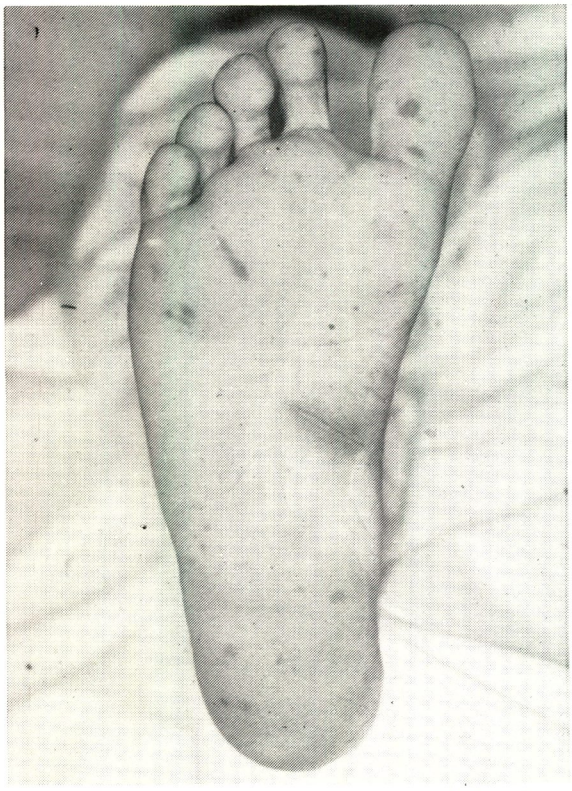

Fig 2. *Pigmentation of the sole of the foot*

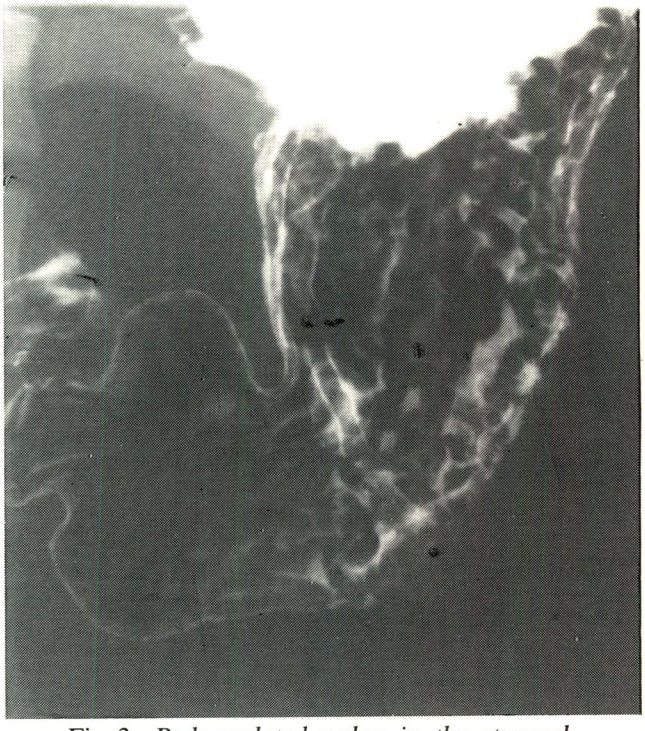

Fig 3. *Pedunculated polyp in the stomach*

occult blood. Blood investigation showed haemoglobin 7 g/dl, haemotocrit 23.6%, MCV 48.8 fl., MCHC 29.7 g/dl, MCH 14.5 pg, WBC 8.6 x 10^9/l, RBC 4.8 x 10^{12}/l, serum amylase 44 U/l, urea 25 mg/dl, creatinine 1.2 mg/dl, and electrolytes were normal. Serum iron was 5 μg/dl and total iron binding capacity 435 μg/dl. Abdominal ultrasound showed a normal liver, spleen and pancreas. Gastrointestinal contrast studies showed multiple polyps in the stomach (Fig 3), duodenum, jejunum, ileum and colon (Fig 4). Gastrointestinal endoscopy confirmed the radiological findings. The biopsy of gastric polyp (Fig 5) composed of branching cores of muscle tissue and covered by gastric mucosa. The surface epithelium and some glands showed intestinal metaplasia, with goblet and paneth cells, but no evidence of malignancy. The colonic polyp biopsy (Fig 6) showed multiple cores of muscle tissue, covered with colonic mucosa with lamina propria. The superficial crypts were cystically dilated and full of mucin; few contain inflammatory cells. The crypts showed focal hyperplastic changes but no evidence of malignancy.

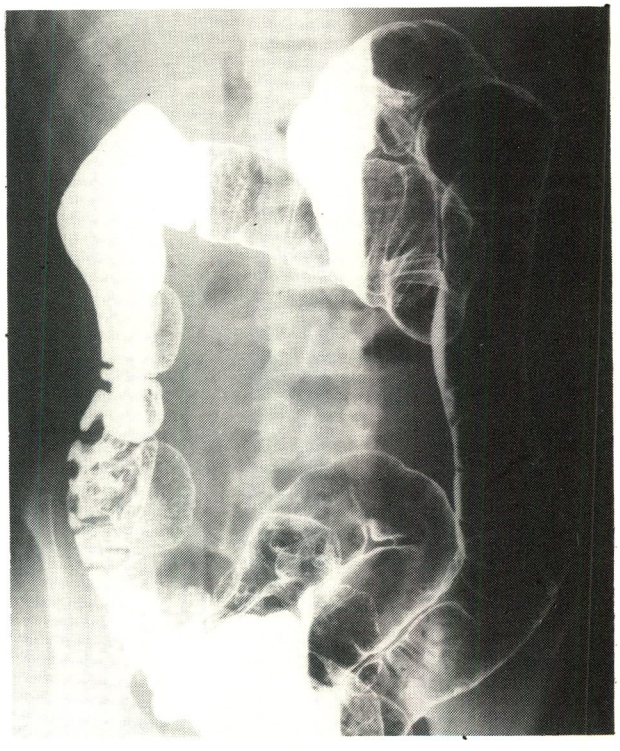

Fig 4. *Multiple polyps in the colon*

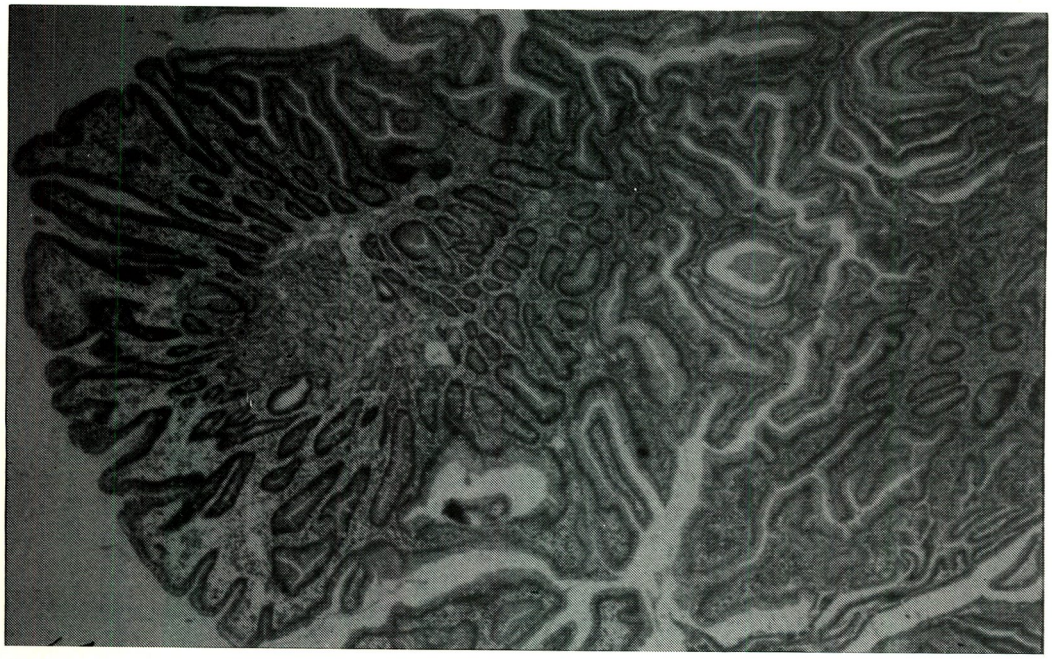

Fig 5.
Histology of gastric polyp

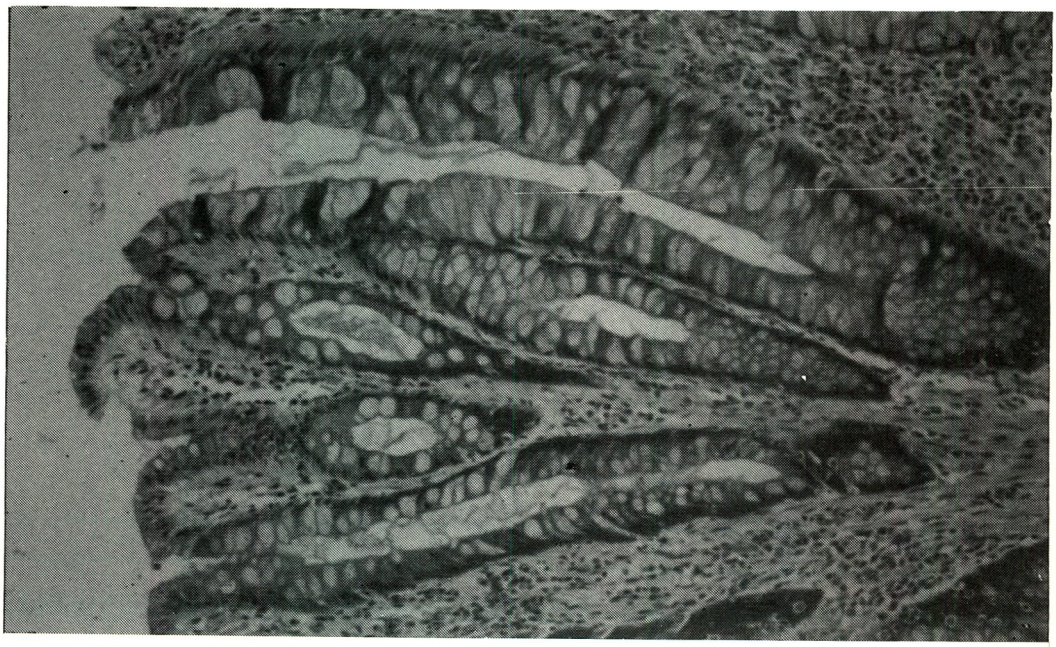

Fig 6.
Histology of colonic polyp

The accessible polyps were removed by endoscopic polypectomy. The patient had blood transfusion, iron and vitamin therapy. He became asymptomatic with normal haemoglobin and negative blood occult stool test. He was discharged to be followed regularly in the clinic, with monthly occult foecal blood test and gastrointestinal endoscopy and contrast study every two years.

The family was interviewed. He has four brothers and three sisters. The parents, the four brothers and two sisters were asymptomatic and their physical examination was normal. One sister who was pregnant then had the same distinctive pigmentation in the palm of her hands, but her blood tests were normal.

DISCUSSION

This syndrome was reported initially by Hutchinson[1] in 1896 but it was Peutz[2] in 1921 who first described this entity with associated pigmentation and polyposis of the gastrointestinal tract in

three generations of one family. Jeghers et al.[3] rediscovered it and reported 22 cases in 1947. Since then more than 325 cases have been described in the literature[4]. This condition is inherited as a simple dominant, hamartomatous polyps in the gastrointestinal tract. It is accompanied by characteristic melanotic pigmentation of the lips and buccal mucosa. The digits and the face may also be pigmented. The polyps may occur throughout the gut[3]. The most common location is in the jejunum and ileum (96%), colon and rectum (30 to 50%), stomach (25%) and duodenum (16.5%)[5].

The age at presentation is usually between 10 and 29 years, with most patients becoming symptomatic in their teens. The most common presenting symptom is recurring colicky abdominal pain caused by intussuscepted bowel secondary to these polyps. Other clinical features include signs and symptoms of obstruction, palpable abdominal mass, borborygmi, and gastrointestinal bleeding range from occult to massive. Most patients are affected with both polyposis and pigmentation. About 5% of the cases have polyposis without pigmentation and a similar number have pigmentation only[3].

Pigmentation of the skin, lips, and buccal mucosa is usually present in the affected child by the age of one or two years. The lesion on the lips and skin tends to fade after the second decade but the buccal pigmentation persists[6,7]. The long-term survival of these patients has not been delineated clearly and conflicting reports appear in the literature. Utsunomiya et al.[7] reported 36 deaths out of 102 patients. They found that 60 percent of the deaths were due to malignancy and 30 percent due to complications of benign polyposis. They also reported decreased long-term survival in these patients when compared with normal population. Linos et al.[8] on the other hand, found no significant decrease in survival of Peutz–Jeghers patients.

The hamartomas in this syndrome usually appear as pedunculated polyps, although sessile lesisons with intramural penetration and cysts formation are not unknown. The basic pathology in Petuz–Jeghers polyps resides in the muscularis mucosa. This layer of the bowel wall forms a tree-like network on which normal mucosal elements are draped. Unlike adenoma, which consists of one predominant cell line, the Peutz–Jeghers lesions contain absorptive cells, goblet cells and paneth cells of normal intestinal mucosa.

The hamartomatous polyps in Peutz–Jeghers syndrome has been considered benign without malignant potential, but several recent reports revealed the rare possibility of malignant changes in the hamartomatous lesions[4], especially of the duodenum[9]. Bailey[10] reviewed 65 cases of Peutz–Jeghers syndrome and reported a 24 percent incidence of gastrointestinal malignancy. Dozois et al.[4], in 1969, evaluated 326 cases and reported only eight instances of gastrointestinal malignancy, all were metastasizing carcinomas. This incidence was 2.4 percent. Most probably, the disparity between these two reports reflects differences in the gross and microscopic interpretation of malignancy. Barthlomew et al.[6] in 1957 stated that discrete mitosis, stalk invasion and cellular hyperchromatism are the evidence on which the diagnosis of malignancy should be based in this syndrome. They did not find documented death from carcinoma in this disease, even though penetration of the bowel wall was identified. The only reliable criteria for malignancy in this syndrome thus appears to be lymphatics or distant metastases that have cytologic characteristics of the primary bowel lesion.

A variety of extraintestinal neoplasms have been reported to be associated with Peutz–Jeghers syndrome. Thatcher et al.[11] reported in 1986 the first case of Peutz–Jeghers syndrome associated with pancreatic adenocarcinoma, several types of ovarian tumors including sex cord tumors with annular tubules[11], granulosa cell tumors and dysgerminoma. Cantu et al.[12] reported a case of feminizing testicular tumor in a young male with Peutz–Jeghers syndrome. Lehur et al.[13] identified a case of Peutz–Jeghers syndrome and bilateral breast cancer.

Most of the cases can be treated conservatively (blood transfusion, iron therapy, anticholinergic). Surgical intervention is required for obstruction or bleeding but the procedure should be limited to relieving the complication only, i.e. polypectomy or minimal resection. Coevorden et al.[14] in 1986, suggested a combined endoscopic and surgical removal of all the polyps in the gastrointestinal tract. He treated 7 patients with a mean follow-up period of 21 months. This combined procedure might be the future management of this condition if the polyps do not recur.

CONCLUSION

Peutz – Jeghers syndrome is a rare disease. It should be included in the differential diagnosis of causes of recurrent abdominal pain in young patients with or without skin pigmentations, because of its surgical complications and the risk to develop cancer in the gastrointestinal and non-gastrointestinal sites.

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