nuclear pleomorphism (Figures 1 and 2) . No mitoses were found and the tumour spread into the mucosa and outwards into the serosa. There was no lymph nodal spread. Immunohistochemistry demonstrated positive staining for CD117 (cKit) (figure 3), and negative staining for broad range cytokeratins (MNF 116), CD34, desmin, S-100 and chromogranin. Although there were no mitoses, based on the size (80 × 40 × 50 mm), the tumour was classified as a GIST of intermediate malignant potential.

The patient made an uneventful recovery and remarkably, all her previous abdominal symptoms were completely resolved. A CT scan of the chest, abdomen and pelvis performed subsequently did not reveal the presence of metastatic disease. Her case was discussed in our multidisciplinary team meeting and it was decided not to proceed with any adjuvant treatment. At one year follow up our patient was a very happy lady completely free of her abdominal symptoms.

Discussion

Although morphologically similar to other benign and malignant smooth muscle and neural stromal tumors, GIST constitutes a distinct group of rare gastrointestinal tract tumors that originate from the interstitial cells of Cajal [6]. The latter are regulators of gut peristalsis and normally express CD117, which is a product of the c-kit proto-oncogene that encodes a tyrosine kinase receptor, which regulates cellular proliferation in GISTs [1,6].

GISTs arise from the muscularis mucosa or muscularis propria layers and most exhibit an endophytic growth pattern, growing within the bowel lumen. The overlying mucosa is usually preserved but larger and more aggressive tumors tend to ulcerate through this. In up to one third of patients the tumor invades an adjacent organ. The vast majority of GISTs (up to 70%) arise in the stomach, with 20–30% originating in the small intestine and the remainder 10% occurring in the oesophagus, colon and rectum [1,3].

The clinical presentation is variable and depends on tumor size and anatomic site. Their submucosal location can produce local obstructive symptoms, particularly when arising in the oesophagus or the small intestine. Vague upper abdominal pain, fullness, GI bleeding, palpable mass are other modes of presentation whereas sometimes they are found incidentally during barium studies, endoscopy or abdominal scans performed for other reasons [1]. According to some authors, visceral obstruction is a rare occurrence even in the presence of extensive peritoneal metastatic disease [7].

Our patient had a very long course of vague symptoms consisting of abdominal pain, nausea, bloating and constipation, which were initially attributed to impaired gut motility as part of the irritable bowel syndrome. Her symptoms, however, failed to improve sufficiently to any treatment approach.

As mentioned above GIST's arise from the interstitial cells of Cajal, which play an important role in the regulation of gut peristalsis. Neoplastic transformation of these cells to a GIST could possibly result in alterations of the normal, local regulation of the gut motility. This hypothesis could, at least in part, explain our patient's symptoms especially at the initial stages of her presentation when the tumor would be too small to cause mechanical obstruction. More research into the physiology of the gut motility in relation to a GIST tumor would be needed to support or reject such a hypothesis.

Conclusion

The occurrence of a GIST in the small bowel can present with vague symptoms, in our case symptoms thought to be from IBS for 11 years. We suggest that at least in the initial years our patients' symptoms may have been the result of functional alteration of gut peristalsis due to the increased number of CD117 positive cells in a slow growing GIST. That would suggest that GISTs can alter the motility of the G.I tract, even when the tumor is significantly small and thus difficult to detect on routine investigations. The symptoms may mimic those of irritable bowel syndrome and an alternative diagnosis should be considered when treating patients who fail to respond for a prolonged period. Resection of the tumour resulting in complete resolution of her symptoms strengthens the above suggestion. Although a diagnostic laparoscopy may not have helped detect the tumour when very small, it could have been considered at some stage during the years preceding her final presentation as acute intestinal obstruction.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

MSK has contributed towards conception, design, analysis and interpretation of data

VK has contributed towards conception, acquisition of data and preparation of the draft.

JMT has contributed towards revising the manuscript critically and has given final approval for the version to be published.