Letter to the Editor

Letter to the Editor RE: ‘Laparoscopic resection of sigmoid colon cancer with intestinal malrotation: A case report’

Dear Editor,

We read with great interest the case report by Nishida et al. [1] entitled ‘Laparoscopic resection of sigmoid colon cancer with intestinal malrotation: A case report’. The article describes the case of a 53 year old man with a sigmoid colon adenocarcinoma who was discovered to have non-rotation of the midgut upon laparoscopic surgery. This diagnosis of intestinal malrotation with concurrent colon cancer is extremely rare, and prior to this case has only been reported in the literature on eleven occasions.

Nishida et al. made a brief reference to a possible link between chronic inflammation, caused by intestinal malrotation, and carcinogenesis. This was previously hypothesised by Ren et al. [2] in their case report of a similar patient. The link between inflammation and malignancy is not a novel idea. In 1863 Virchow reported an increased incidence of cancer at sites of chronic inflammation [3]. In addition, it is well documented that patients with inflammatory bowel disease have a significantly increased risk of developing colorectal cancer, perhaps as high as ten-fold [4].

Although there is no direct evidence to support the hypothesis of intestinal malrotation as a causative agent of carcinogenesis, the link between chronic inflammation and malignancy has been extensively highlighted in the literature [3,5]. Most recently it has been hypothesised that specific factors such as nuclear factor-κB (NF-κB) are involved. More specifically, the activation of NF-κB during inflammation in turn activates anti-apoptotic genes and endothelial growth factor, thereby promoting cell division and neo-vascularisation of potential tumour sites [6].

If a link between intestinal malrotation and chronic inflammation could be established it would be fair to conclude that intestinal malrotation was a risk factor for developing colon cancer. Due to the rare occurrence and often incidental finding of intestinal malrotation in adults, there is no evidence directly linking it to chronic inflammation. However, the presentations of many of the cases of concurrent malrotation and malignancy, including long term intermittent abdominal pain and vomiting, suggest a history of intermittent chronic bowel obstruction [7,8]. We hypothesise that patients with intestinal malrotation have a semi-obstructive bowel, which in turn promotes chronic inflammation and in doing so increases risk of carcinogenesis.

The case of Nishida et al. also highlights the possibility of a semi-obstructive bowel in patients with malrotation as this patient presented with a long history of post prandial abdominal discomfort. Although there is no direct link between malrotation and cancer, we have displayed the strong connection between chronic inflammation and cancer. We suggest that patients with malrotation have a chronic inflammation of the bowel, due to a chronic semi-obstruction which may contribute to the increased risk of developing cancer. Although more evidence is needed before making any conclusions, it is important that clinicians are aware of the possibility of malrotation in patients presenting with abdominal pain, bloating and other obstructive symptoms, and the potential link to colon cancer.

Conflicts of interest

None.

Sources of funding

n/a.

Ethical approval

n/a.

Consent

n/a.

Author contribution

Matthew Edmunds – Writing the paper.
David Flaherty – Writing the paper.

References

[1] K. Nishida, T. Kato, A.K. Lefor, T. Suganuma, Laparoscopic resection of sigmoid colon cancer with intestinal malrotation: a case report, Int. J. Surg. Case Rep. 34 (2017) 77–80.
[2] P.T. Ren, B.C. Lu, Intestinal malrotation associated with colon cancer in an adult: report of a case, Surg. Today 39 (7) (2009) 624–627.
[3] F. Balkwill, A. Mantovani, Inflammation and cancer: back to Virchow? Lancet 357 (9255) (2001) 539–545.
[4] H. Lu, W. Ouyang, C. Huang, Inflammation, a key event in cancer development, Mol. Cancer Res. 4 (4) (2006) 221–233.
[5] L.M. Coussens, Z. Werb, Inflammation and cancer, Nature 420 (6917) (2002) 860–867.
[6] B. Horsel, J.A. Schmid, The complexity of NF-kappaB signaling in inflammation and cancer, Mol. Cancer 12 (2013) 86.
[7] D.W. Dietz, R.M. Walsh, S. Grundfest-Broniatowski, I.C. Lavery, V.W. Fazio, D.P. Vogt, Intestinal malrotation – a rare but important cause of bowel obstruction in adults, Dis. Colon Rectum 45 (10) (2002) 1381–1386.
[8] P.J. Pickhardt, S. Bhalla, Intestinal malrotation in adolescents and adults: spectrum of clinical and imaging features, AJR Am. J. Roentgenol. 179 (6) (2002) 1429–1435.

http://dx.doi.org/10.1016/j.ijscr.2017.04.007
2210-2612 © 2017 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Matthew Edmunds*  
David Flaherty  
* Corresponding author.  
E-mail address: me12388@my.bristol.ac.uk  
(M. Edmunds)