Synchronous colorectal cancers (SCRC) constitute about 1.1 to 5.3% proportion of colorectal cancers. It is rather vital to diagnose a SCRC in order to avoid surgical re-intervention and poorer prognosis. This report documents a 61 year old female with persistent bleeding per rectum with history of weight loss. Family history of colorectal malignancy was present.
Highlight: Abstracts from the
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The Anatomy and Pathogenesis of Tendinous Interconnection between Flexor Tendons in the Musician’s Hand

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Introduction

The World Journal of Medical Education and Research (WJMER) (ISSN 2052-1715) is an online publication of the Doctors Academy Group of Educational Establishments. Published on a quarterly basis, the aim of the journal is to promote academia and research amongst members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from around the world. The principal objective of this journal is to encourage the aforementioned, from developing countries in particular, to publish their work. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings. We envisage an incessant stream of information flowing along the channels that WJMER will create and that a surfeit of ideas will be gleaned from this process. We look forward to sharing these experiences with our readers in our editions. We are honoured to welcome you to WJMER.
Synchronous Colorectal Cancers: A Case Report and Review of Literature.

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Abstract
Synchronous colorectal cancers (SCRC) constitute about 1.1 to 5.3% proportion of colorectal cancers. It is rather vital to diagnose a SCRC in order to avoid surgical re-intervention and poorer prognosis. This report documents a 61 year old female with persistent bleeding per rectum with history of weight loss. Family history of colorectal malignancy was present. Colonoscopy showed multiple polypoidal growths at 20cms, 40cm, and 65 cm from the anal verge, near hepatic flexure and caecum. Histology of these four polyps are consistent with adenocarcinomatous change. CT abdomen reported as wall thickening in the proximal third of transverse colon with luminal narrowing and multiple polyps in the caecum, ascending colon, descending colon and sigmoid colon. No regional lymphadenopathy was seen. Patient underwent total colectomy. Pathological analysis of the surgical specimen confirmed the diagnosis of multiple intestinal adenocarcinoma. This case report emphasizes the need for a pre-operative diagnosis to ensure a good patient prognosis in colorectal malignancies.

Key Words
Synchronous colorectal cancer, High grade dysplasia, Index lesion, Concurrent lesion

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Case Presentation
A 61-year-old female was evaluated for bleeding per rectum for the past twenty days.

There was history of mucus in the stools mixed with blood and significant loss of appetite with weight loss of 10 kilograms over a period of 3 months. She denied of any pain or protrusion of any masses on while defecation. She had lost 10 kilograms over a period of 3 months. Family history of colonic malignancy was present. Her sister underwent treatment for left sided colonic cancer 2 years ago.

General physical examination was unremarkable. There was no pallor. On abdominal examination a vague mass was palpable in the right lumbar region. There was no hepato-splenomegaly or ascites. Digital rectal examination was normal. There was no growth palpable. Colonoscopy (figure 1) and computed tomography of the abdomen (figure 2) done.

Investigations
Colonoscopy revealed multiple polypoidal growths at approximately 20cm, 40cm, 65cm from the anal verge and near hepatic flexure and caecum (Figure 1). Biopsies of these polyps were taken and sent for histology.

Computed tomography of the abdomen showed a short segment circumferential wall thickening in the proximal third of the transverse colon (extending for a length of 4.3cm) with luminal narrowing. Polyps were noted in the caecum, ascending colon, descending colon (posterior wall) and sigmoid colon.

Figure 1: Ulcerative growth in the proximal transverse colon on colonoscopy 65 cms from the anal verge.
There was no evidence of calcifications within and no evidence of obstruction. Liver was normal in size and attenuation. There was no free fluid in the abdomen. CEA and chest X-ray was normal.

The final histopathology of four proximal polypoidal lesions was reported as well-differentiated intestinal adenocarcinoma. The other colonic polyps in sigmoid colon was showing adenomatous changes with high grade dysplasia.

**Treatment**

Patient underwent total colectomy with ileo-rectal anastomosis (Figure 3). Surgical margins were free of tumour and all the 15 lymph nodes that were sampled showed reactive hyperplasia.

**Outcome and Follow-up**

Postoperative period was uneventful. In view of stage (stage 2A), she was advised 5-FU chemotherapy with capacetabine. She refused any further treatment and hence was advised for a 3 monthly follow-up with colonoscopy, ultrasonography and CEA.

**Discussion**

Colorectal malignancies were previously thought to be predominant in the western world.

However, due to the recent changes in diet and lifestyle in the eastern world, these malignancies are a common picture in the Asian subcontinent and the Asia Pacific region as well. The Global Cancer Statistics also adds Eastern Europe to the picture.

According to the Global Cancer statistics, colorectal cancer (CRC) is the third most commonly diagnosed cancer in males and the second most in females. The incidence being 4.4% in males and 1.7% in females in the developed world and 1.4% in males and 0.8% in females in the developing world. To add to the burden, synchronous colorectal cancers (SRCS) are also on the rise. Its prevalence ranging from 1.8% - 2.3% to 12.4%. Although SRCSs encompass a significant proportion; 1.1% - 5.3%, there is very little literature regarding its aetiology, diagnosis, treatment and prognosis.

The definition of a synchronous tumour was first described through the Billroth’s criteria in 1879: “1) tumours should have different histological appearance, 2) to have the point of start in different epithelia of that organ; 3) each tumour should generate their metastasis”. Warren and Gates later incorporated the above definition to clinically diagnose SCRCs. This criterion entails that: “1) each tumour must present a definite picture of malignancy, 2) each tumour must be distinct, 3) the probability of one being a metastasis of the other must be excluded, 4) the synchronous lesions must be diagnosed simultaneously or within six months of the initial diagnosis”.

SCRCs exhibit significant differences in pathological and molecular features from CRCs.

A study by Oye et al found that SCRCs were
predominantly located in the left colon, penetrated the wall less and were more common in advanced lesions. The index lesion (the most advanced lesion) when compared to the concurrent lesion (those other than index lesion) were found to be larger in size, moderately differentiated, penetrated the wall more and grossly appeared ulcerated. The study also found that the incidence of concurrent adenomas was significantly higher in patients with SCRCs. A study by Nosho et al revealed that SCRCs are more commonly associated with BRAF mutations (especially the proximal colon tumors), LINE-1 methylation, CIMP-high, and MSI-high. Tumours in concordant locations exhibited a pattern of CpG island methylation as opposed to tumours in discordant locations.

There is no concrete evidence for risk factors and aetiology for SCRC. Although there are numerous theories dwelling upon the male sex, older age groups, smoking and alcohol, none have been able to definitely prove what actually causes synchronous lesions. It is postulated that people from the older age group develop SCRC because of decreased resistance to carcinogenic agents, environmental factors and immunological changes. Some studies suggest that the presence of testosterone has a negative impact on tumour immunity and female sex steroids such as oestrogen has a protective one. Hence, it is more common to find synchronous tumours in men than in women.

In our case the patient was a 61 year old female. Recent genetic analysis of these tumours has gained some insight. It has been observed that these tumours show different types of p53 mutations than the traditional colorectal cancers. Studies by Nosho et al and Gonzalo et al found that there was methylation at the promoter region especially the MGMT1, MGMT2 and RASSFIA genes. Some studies by Nosho et al demonstrated mutations in the cell cycle signalling gene BRAF. This study also found microsatellite instability was more common in CRC than in SCRC.

When there is a case of colorectal malignancy, a possibility of synchronous tumours should always be kept in mind whether pre-operatively, intraoperatively or postoperatively.

The most important time being the pre-operative period. During the 70s, preoperative diagnosis was rare and most were diagnosed intraoperatively through bowel manipulation or simply as a chance occurrence. Important investigative procedures include double contrast barium enema, colonoscopy, Computed tomographic (CT) colonography, MRI and a combination of CT Colonography and PET scan. Barium enema may not be able to detect multiple growths and visualization may become difficult as the tumour may be obscured by bleeding, inadequate bowel preparation, retained faeces and presence of annular carcinoma. Colonoscopy is a better option, provided that the bowel is adequately prepared. CT colonography is a much superior option. MRI and CT colonography with PET scan can also be substituted. Intra-operatively, it is imperative that the entire colon be palpated. This has its fair share of disadvantages since it is associated with a high chance (upto 69%) of missing a diagnosis of SCRC. Therefore, a thorough pre-operative clinical and radiological intervention is necessary. Postoperative total colonoscopy is extremely important as well. This can reveal small synchronous tumours which otherwise go unnoticed during surgery.

The primary mode of treatment for SCRC is surgical resection. Some cases have reported a successful single incision laparoscopic total abdominal colectomy with an ileo-rectal anastomosis and intra-operative CO2 colonoscopy. A right hemicolecction or anterior resection of rectum is recommended for lesions in contiguous intestinal segments while transanal endoscopic microsurgery (TEM) has been advocated for lesions in distal colonic segments. It has been noticed that TEM is associated with a decreased postoperative complications and morbidity. Palliative approach would be a terminal colostomy or a segmental colostomy.

Overall, SCRCs have a worse prognosis than single CRCs. Possible reasons for high mortality could be due to understaging of the cancer, increased incidence of postoperative complications or varying molecular features.

References
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