Case study

TOTALLY LAPAROSCOPIC MANAGEMENT WITH NATUTAL ORIFICE SPECIMEN RETRIEVAL OF A RARE INCIDENTAL SYNCHRONOUS COLONIC AND ENDOMETRIAL CANCER

ABSTRACT

Aim: To present a rare case report of non-familial incidentally detected synchronous cancer involving splenic flexure of colon and endometrium managed by totally laparoscopic approach with both the specimens retrieved through vagina.

Presentation of case: A 56-year-old lady presented with pain abdomen and on evaluation diagnosed to have carcinoma of splenic flexure colon and endometrial cancer.

Discussion: Synchronous transverse colon /splenic flexure and endometrial cancer is a very rare entity.In our case CECT played a vital role in early detection of asymptomatic colonic malignancy. Traditionally, the surgery for simultaneous double cancer of the colon and uterus required a large laparotomy incision to the upper and lower abdomen. After extensive literature search, we believe this is the first reported case of non-familial synchronous malignancy of splenic flexure of colon and endometrium which was managed by totally laparoscopic approach and specimen retrieved through natural orifice.

Conclusion: Totally laparoscopic approach with natural orifice retrieval of specimens for synchronous gastrointestinal and endometrial malignancy is safe and feasible in experienced hands.

KEYWORDS

Synchronous cancer, endometrial cancer, colonic cancer ,Lynch syndrome ,Laparoscopic extended left hemicolectomy

INTRODUCTION

The term synchronous(SC) tumors are applied if two different tumors originating in the same patient are detected at the same time or within six months.(1)If the second tumor is detected beyond six months, it is called metachronous(1).SC primary cancer of endometrium and ovarian origin are common among pelvic synchronous malignancies but, SC endometrial and transverse colon /splenic

flexure cancer is a very rare entity(2). It is important to consider hereditary cancer syndromes in women with a strong family history presenting with SC multiple primary malignancies(3). We herein report a very rare case of SC splenic flexure of colon cancer with endometrial cancer which was managed by totally laparoscopic approach and both the specimen retrieved through vagina.

PRESENTATION OF CASE

A 56-year-old female patient with a body mass index of 37.5 presented to emergency department with colicky pain abdomen on and off since 1 month and with history of white discharge per vagina(WDPV).Contrast Enhanced Computed Tomography (CECT) of abdomen revealed wall thickening of transverse colon with pericolic nodes and hypodense area 4.4 cm thick in the region of the endometrium extending to the lower cervix suspicious of malignancy at both the areas (Fig 1a,1b)**.**Colonoscopy showed splenic flexure growth(Fig 1c) and biopsy was suggestive of moderately differentiated adenocarcinoma. Transvaginal sonography (TVS) showed endometrium thickness of 3.1 cm with heterogenous echo texture and increased vascularity with distinct endomyometrial interface.(Fig 1d). Her serum CEA was 8 ng/ml (non-smoker <or +3.5 ,smokers <or +5.5) and CA-125 was 11.8 u/ml (normal range <35). She did not have any family history of carcinomas. After a multidisciplinary team meeting involving gynecologist and radiologist, a decision was taken to perform laparoscopic extended left colectomy (LELC)with Total laparoscopic hysterectomy and bilateral salphingooophorectomy(TLH BSO). An informed written consent was obtained from the patient.

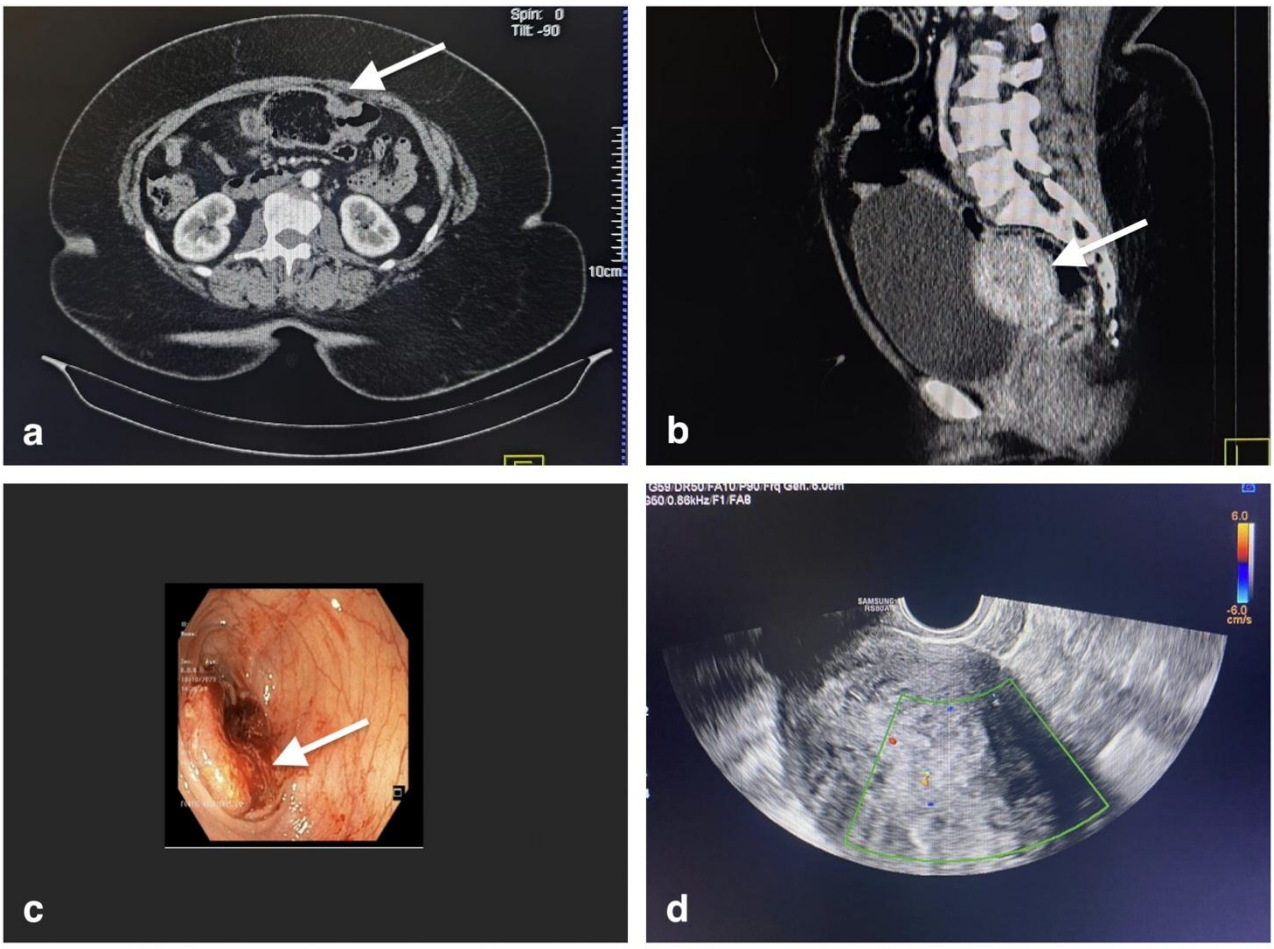

Figure 1

a: CECT showing thickening at transverse colon (white arrow: thickening)

b: CECT showing thickened endometrium (white arrow: thickened endometrium)

c: Colonoscopy showing growth at splenic flexure (white arrow: growth)

d: TVS showing thickened endometrium

Operative technique

Under general anesthesia(GA),the patient was placed in low lithotomy position with left side up. Extended left hemicolectomy was performed using medial to lateral vessel first approach(Fig 2 a-o).The specimen of LELC was kept in upper abdomen. Using the same ports TLH BSO was performed by gynecologist team. The specimen of LELC and TLHBSO and were retrieved through the vagina . The vaginal vault was closed by intracorporeal laparoscopic suturing and drain was placed in the pelvis .(Fig 3a-f) The total operative time was 245 minutes.

The patient was started liquids orally on the 2nd postoperative day (POD) and was discharged on 4th POD on semisolid diet. Drain was removed on the 7th POD. Histopathology of the resected specimens showed features of well differentiated adenocarcarcinoma with mucinous component of colon (pT3N0) ,endometroid endometrial carcinoma Grade 1 (pT1bpNx). She received 6 cycles of

adjuvant chemotherapy for her colonic malignancy. At 1 year follow up she does not have any recurrence and her CEA reports were normal.

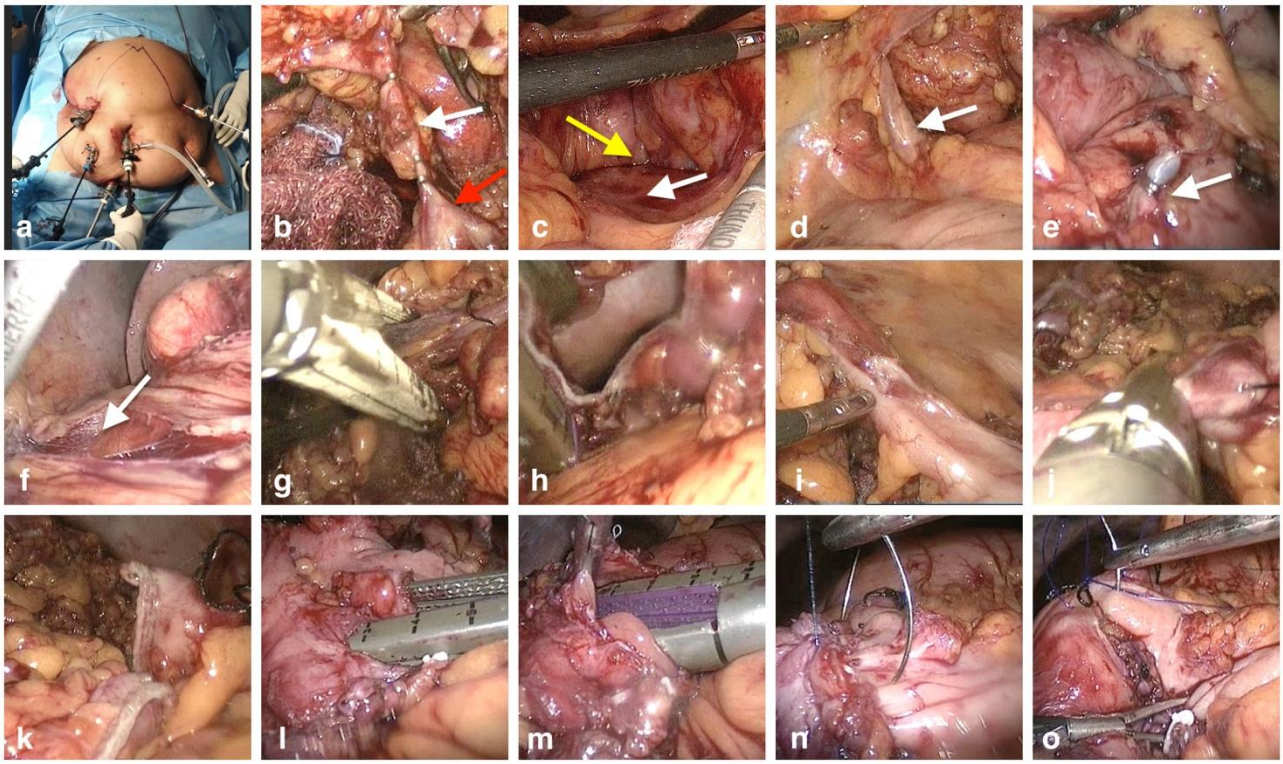

Figure 2

a: Port placements

b: Left colic artery clipped and cut (white arrow left colic artery, red arrow; inferior mesenteric artery0

c: Medial to lateral mobilization of splenic flexure (white arrow: Gerotas fascia, yellow arrow: splenic flexure)

d: Left branch of middle colic artery (white arrow: left branch of middle colic artery)

e: Left branch of middle colic artery clipped and divided (white arrow: left branch of middle colic artery)

f: Hepatic flexure mobilization

g: Staple transection of transverse colon

h: Divided transverse colon

i: Descending colon -sigmoid colon junction

j: Staple transection of descending-sigmoid colon junction

k: Divided descending-sigmoid colon junction

l,m: Stapled side to side colo-colic anastomosis

n,o: Intracorporeal suture closure of colo-colostomy with 2 layers

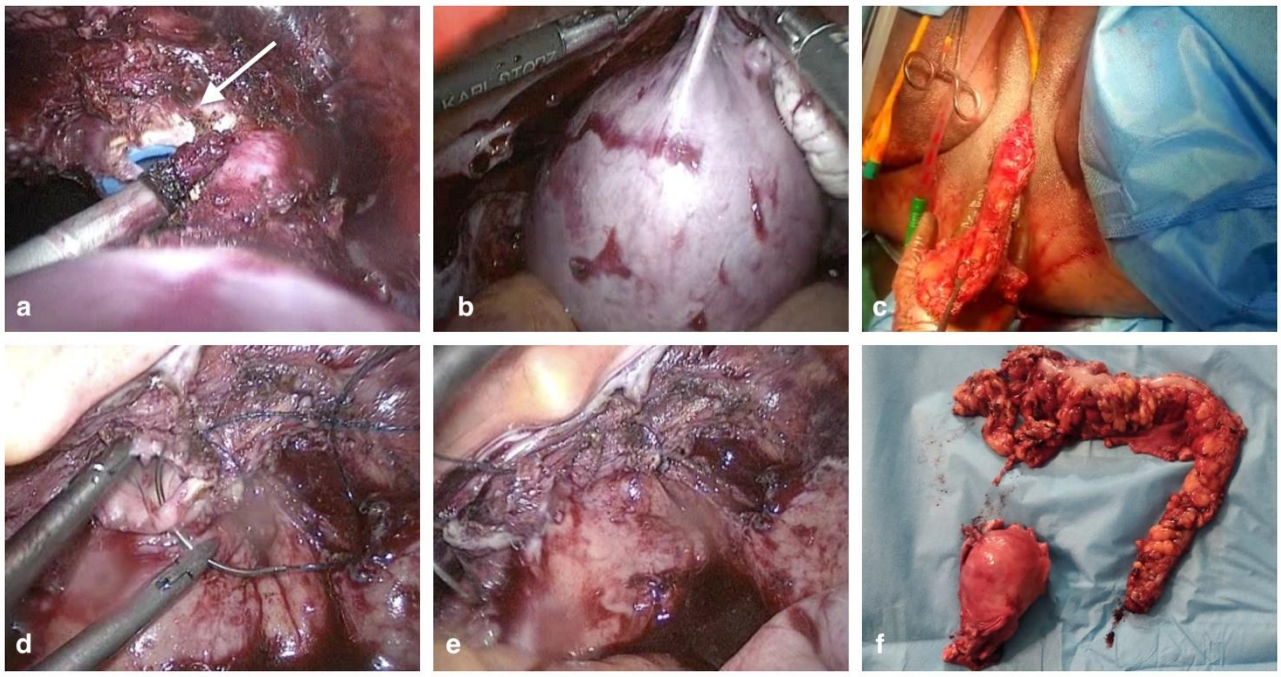

Figure 3

a: Vault division with harmonic shears

b: TLH BSO specimen

c: Specimens retrieved through vagina

d: Vault closure with 2-0 barbed suture

e: Closed vault

f: Specimens

DISCUSSION

Two simultaneous malignancies to be classified as SC malignancies they must meet the following criteria: (4-5-6)

- It must be excluded that one tumor is metastasis of the other.
- There must be definite patterns of malignancy with different histology and absence of histological signs that indicate tumor invasion of one cancer in the seat organ of the other.
- There must be aneuploidies or karyotypes with different genetic abnormalities.

Lynch syndrome(LS) characterized by a high risk of malignancies, including colorectal malignancy 2%-3% of cases, life time risk of 52-82% (3), endometrial malignancy 2.3 % of cases, lifetime risk of 25-6-% (7).LS is autosomal dominantly inherited disorder caused by a germline mutation in one of the four DNA mismatch repair (MMR) genes - MLH1,MSH2,MSH6 or PMS2 (3) or deletions in the EPCAM gene that results in inactivation of MSH2 which is located nearby.(8).In our case Immunohistochemistry(IHC) revealed that nuclear expression was retained in tumor cells MLH1, MSH2, MSH6 and PMS2.As per the classic molecular testing approach (9-10-11-12)for training

colorectal cancer cases for germline mismatch repair (MMR)gene mutation testing ,if tumor displays MMR proficiency proceed to gremlin MMR gene mutation testing only if family history is indicative of LS.Hence in our case we didn't proceed with germ line mutation testing.

In our case CECT played a vital role in early detection of asymptomatic colonic malignancy. This also helped to suspect endometrial carcinoma in the same patient who had WDPV.One should have high suspicion of asymptomatic colonic malignancies in suspected or diagnosed endometrial malignancy and thorough CECT of entire abdomen and pelvis has to be requested rather than limited pelvic CECT to avoid missed diagnosis of asymptomatic colonic malignancy.

Traditionally, the surgery for simultaneous double cancer of the colon and uterus required a large laparotomy incision to the upper and lower abdomen. Villatoro AR et al (13)reported a case of SC triple tumor of ovary, endometrium and sigmoid which was dealt by exploratory laparotomy. In a case report by Capilna et al (14)involving triple pelvic malignancy of fallopian tube, endometrium and sigmoid colon managed by laparotomy. Another case report by Mendez LE et al (15) of triple SC primary malignancy involving colon, endometrium, and kidney in a patient with LS which was managed by robotic with hand assisted surgery. Thus, in available literature about SC double /triple primary tumors most of the cases were operated either by laparotomy ,laparoscopic/robotic surgery where specimen was retrieved by a minilaparotomy / small incision over abdomen. Our case is a rarity as the patient did not have any family history of carcinomas, both the surgeries were performed by totally laparoscopically approach through the same ports and both the specimens were retrieved vaginally(through natural orifice).

Li X W et al (16) in their retrospective cohort study have described retrieval of colectomy specimen for malignancy through posterior colpotomy.After extensive literature search, we believe this is the first reported case of non-familial synchronous malignancy of splenic flexure of colon and endometrium which was managed by totally laparoscopic approach and specimen retrieved through natural orifice.

CONCLUSION

Totally laparoscopic approach with natural orifice retrieval of specimens for synchronous gastrointestinal and endometrial malignancy is safe and feasible in experienced hands. High index of suspicion is required to diagnose these synchronous malignancies with CECT playing a pivotal role.

References

1. C.G. MoertelMultiple primary malignant neoplasms: historical perspectives Cancer, 40 (4 Suppl) (1977), pp. 1786-1792

2. S. J. Lanspa, H. T. Lynch, T. C. Smyrk et al., "Colorectal adenomas in the Lynch syndromes: results of a colonoscopy screening program," Gastroenterology, vol. 98, no. 5, pp. 1117–1122, 1990.
View at: Google Scholar

3. Moller P, Seppala TT, Bernstein I, Holinski-Feder E, Sala P, Gareth Evans D, et al. Cancer risk and survival in path_MMR carriers by gene and gender up to 75 years of age: a report from the Prospective Lynch syndrome database. Gut. 2018;67(7):1306–1316. doi: 10.1136/gutjnl-2017-314057

4.Cuquerella J, Ortí E, Canelles P, Quiles F, Pamos S y col (2009) Cáncercolorrectal, concepto de neoplasiassincrónicas y metacrónicas. Rev Sdad Val Patol Dig 19: 57-60.

5.Eisner RF, Nieberg RK, Berek JS (1989) Synchronous primary neoplasms of the female reproductive tract. Gynecol Oncol 33: 335-339.

6.Woodruff JD, Solomon D, Sullivant H (1985) Multifocal disease in the upper genital canal. ObstetGynecol 65: 695-698.

7. Hampel H, Bennett RL, Buchanan A, Pearlman R, Wiesner GL. A practice guideline from the American College of Medical Genetics and Genomics and the National Society of Genetic Counselors: referral indications for cancer predisposition assessment. Genet Med. 2015;17(1):70–87. doi: 10.1038/gim.2014.147.

8.Vasen HFA, Watson P, Mecklin JP, Lynch HT. New clinical criteria for hereditary nonpolyposis colorectal cancer (HNPCC, Lynch syndrome) proposed by the International Collaborative Group on HNPCC. *Gastroenterology*. 1999; 116(6):1453–1456 [PubMed] [Google Scholar]

9.Kempers MJE, Kuiper RP, Ockeloen CW, et al. Risk of colorectal and endometrial cancers in EPCAM deletion-positive Lynch syndrome: a cohort study. *Lancet Oncol*. 2011; 12(1):49–55 [PMC free article] [PubMed] [Google Scholar]

10.HermanJGUmarAPolyakKIncidence and functional consequences of hMLH1 promoter hypermethylation in colorectal carcinomaProc Natl Acad Sci U S A19989512687068759618505 [Crossref][PubMed][Web of Science ®], [Google Scholar]

11.ParsonsMTBuchananDDThompsonBYoungJPSpurdleABCorrelation of tumour BRAF mutations and MLH1 methylation with germline mismatch repair (MMR) gene mutation status: a literature review assessing utility of tumour features for MMR variant classificationJ Med Genet20124931511572236829 8 [Crossref][PubMed][Web of Science ®], [Google Scholar]

12.HealdBPlesecTLiuXImplementation of universal microsatellite instability and immunohistochemistry screening for diagnosing lynch syndrome in a large academic medical centerJ Clin Oncol20133110133613402345 4 [Crossref][PubMed][Web of Science ®], [Google Scholar]

13. Villatoro AR, Domingo AG, Jiménez IR, Palacios MNC (2022) Synchronous TumourOf The Ovary, Endometrium And Sigmoid; A Case Report And Bibliographic Review. J Med Case Rep Case Series 3(09): https://Doi.org/10.38207/JMCRCS/2022/SEP03090163

14.Căpîlna ME, Rusu SC, Szabo B, Marian C (2014) Threesynchronous primary pelvic cancers-a case report. Rev MedChir Soc Med Nat Iasi. 118(1): 107-10.

15. Mendez LE, Atlass J (2016) Triple synchronous primarymalignancies of the colon, endo-metrium and kidney in a patientwith Lynch syndrome treated via minimally invasive techniques. Gynecol Oncol Rep. 17: 29-32.

16.Li XW, Wang CY, Zhang JJ, Ge Z, Lin XH, Hu JH. Short-term efficacy of transvaginal specimen extraction for right colon cancer based on propensity score matching: A retrospective cohort study. Int J Surg. 2019 Dec;72:102-108. doi: 10.1016/j.ijsu.2019.07.025. Epub 2019 Jul 27. PMID: 31362128.