

Jaundice after cytoreductive surgery along with hyperthermic intra-peritoneal chemotherapy in an ovarian cancer patient: A case report

Sir,

Cytoreductive surgery (CRS) along with hyperthermic intra-peritoneal chemotherapy (HIPEC) is an established treatment of peritoneal cancer.^[1] It is associated with morbidity, as high as 50%.^[2] After major abdominal surgery, post-operative jaundice is a common complication. Benign post-operative intra-hepatic cholestasis (BPIC) is one rare cause of it.^[3] No case of BPIC is described in literature after CRS-HIPEC till now.

A 55-year-old, ovarian cancer patient was treated with total abdominal hysterectomy with bilateral salpingo oophorectomy (TAHBSO) 10 years back. After a disease-free interval of 9 yrs, the disease recurred. She received carboplatin and paclitaxel initially and liposomal doxorubicin and bevacizumab as 2nd line chemotherapy. As the disease progressed to involve peritoneum, she was posted for CRS-HIPEC.

The patient was hypertensive and diabetic, and her haemoglobin was 7.9 gm/dL. 2 units of packed red blood cells (PRBC) was transfused to the patient, one day before surgery, and her haemoglobin level raised to 10.2 gm/dL. Anaesthesia was induced with propofol (100 mg) and fentanyl (100 µg) and maintained with inhalational sevoflurane. Analgesia was ensured with an epidural infusion of ropivacaine 0.15% with

fentanyl 2 µg/mL at 4–6 mL/h. She underwent excision of an adnexal mass, sigmoid colectomy, anterior resection, cholecystectomy and total peritonectomy followed by HIPEC with cisplatin for 75 min with 42° C temperature. The intra-operative evaluation revealed multiple peritoneal deposits in the right and left sub-diaphragmatic region, over the rectum, sigmoid colon and greater omentum with peritoneal carcinomatosis index (PCI) of 7. Intraoperatively patient was haemodynamically stable with 700 mL blood loss and 2000 mL urine output. 4 unit fresh frozen plasma (FFP), 2 units PRBC and 5500 mL crystalloid were administered during the 480 min procedure. The patient's trachea was extubated after the procedure. On 1st post-operative day (POD) she developed deep icterus with a total bilirubin of 18.76 mg/dL and direct bilirubin of 15.72 mg/dL. Serum glutamic oxaloacetic transaminase (SGOT) and serum glutamic pyruvic transaminase (SGPT) levels were normal with mildly raised alkaline phosphatase (ALP) [Table 1]. Peripheral blood smear (PBS) did not show features of haemolysis. Ultrasound examination of the abdomen did not show dilated common bile duct, and the echotexture of hepatic parenchyma was unaltered. Bilirubin level gradually decreased with satisfactory post-operative recovery. Eventually the patient was discharged on postoperative day (POD) 8.

CRS-HIPEC is associated with many complications like gastrointestinal fistulas, renal impairment, thrombocytopenia, neutropenia, etc.^[4,5] Elevated bilirubin level due to hepatic insufficiency and necrosis was also reported.^[6] But post-operative jaundice without any evidence of liver toxicity and haemolysis is not yet reported in literature following CRS-HIPEC. This case report is the first of its kind. In BPIC, clinical and laboratory picture looks like biliary obstruction

Table 1: Blood investigation reports in the perioperative period							
Investigations	One day prior to surgery	POD 1	POD 2	POD 3	POD 4	POD 5	POD 6
Total Bilirubin (mg/dL)	0.33	18.76	14.76	10.63	7.52	4.95	2.13
Direct Bilirubin (mg/dL)	0.13	15.72	12.71	9.24	6.16	4.45	1.98
SGOT (unit/L)	16	53	46	50	58	56	45
SGPT (unit/L)	10	36	33	42	48	50	52
ALP (unit/L)	98	58	70	68	84	80	78
INR	1.1	1.6	1.4	1.2	1.1	1.1	1.1
Albumin (gm/dL)	4.02	2.5	2.8	3.4	3.1	3.0	3.0
Urea (mg/dL)	33	45	58	71	60	49	47
Creatinine (mg/dL)	0.84	1.11	1.30	1.20	0.98	0.82	0.70
Hb (gm/dL)	10.2	12.5	10.6	10.4	10.2	10.3	9.7
TLC/dL	9280	7780	14420	12570	12450	11780	10,500
Platelet count/micro litre	2,39,000	1,59,000	1,71,000	1,61,000	1,72,000	1,68,000	2,16,000

POD – Post-operative day; INR – International normalised Ratio; TLC – Total leucocyte count; SGOT – Serum glutamic-oxaloacetic transaminase; SGPT – Serum glutamic -pyruvic transaminase; ALP – Alkaline phosphatase; Hb – Haemoglobin; TLC – Total leucocyte count

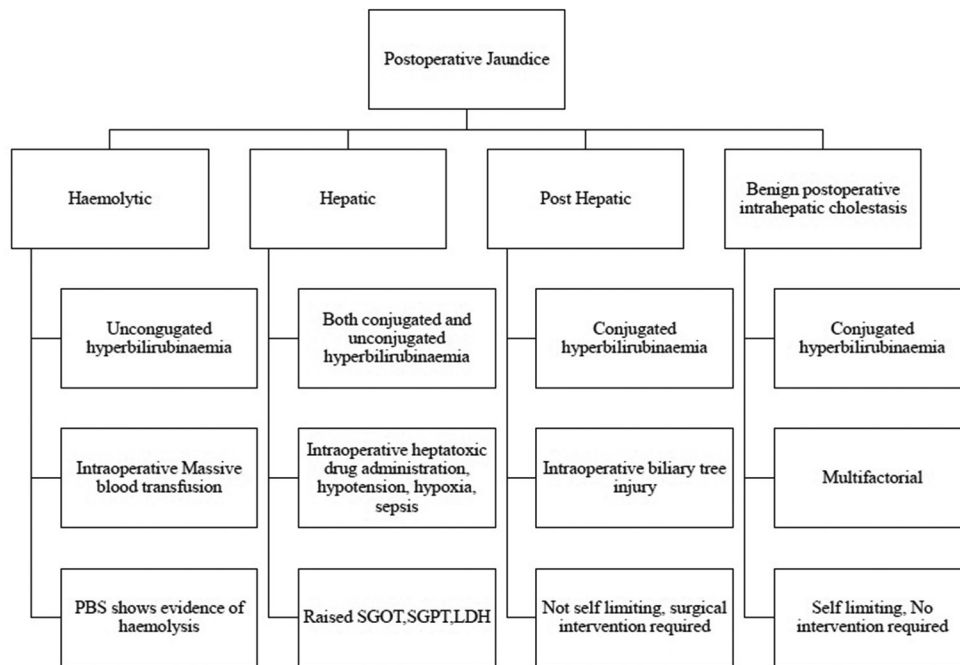


Figure 1: Showing differential diagnosis of post-operative jaundice

without any extrahepatic anatomical obstruction. It follows prolonged and difficult surgical procedures. Direct hyperbilirubinemia may even reach 40 mg/dL. It usually develops anytime within the first 10 PODs. Normal SGOT and SGPT level with a variable elevation of ALP is the signature laboratory finding of BPIC. The course of the jaundice is benign with a duration of 2 to 30 days, and it disappears without specific treatment.^[3]

Absence of evidence of haemolysis in PBS and very low unconjugated bilirubin in blood excluded the diagnosis haemolytic jaundice. Normal SGOT and SGPT levels did not favour the diagnosis of hepatic jaundice [Figure 1]. There was also no evidence of an extrahepatic obstruction or pre-operative liver disease. Thus, the clinical course and the laboratory findings were suggestive of BPIC in our

patient. The long duration of anaesthesia, manipulation in proximity to the biliary tree and the placement of tubing carrying warm chemotherapeutic agents in the proximity of biliary tree are probable contributory factors in our patient. After CRS-HIPEC, which is a long duration major surgery, BPIC is not an unlikely event. Being benign in nature, BPIC needs minimal diagnostic and therapeutic measures.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and

due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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