Evisceration and necrosis of gall bladder and evisceration of urinary bladder in a patient of gastroschisis

Sir,

The term gastroschisis (Gastro = belly, Schisis = separation) was coined by Taruffi in 1894,[1] and it refers to an abdominal wall defect situated usually on the right side of umbilical cord, through which intestine and rarely other abdominal viscera are eviscerated, with no covering membrane or sac.[2] There has been increased incidence of gastroschisis in the past few decades. This might be due to better survival of affected infants and a clear demarcation between ruptured omphalocele and gastroschisis.[3]

Some case reports described the association of gastroschisis with biliary atresia, choledochal cyst, cleft lip and palate, and sternal cleft etc. However, it is more frequently associated with intestinal atresia and gastro-esophageal reflux.[4–6]

Usually mid gut is eviscerated, but the whole gut and urinary bladder eviscerations are also reported.[3,7,14] We report a case of gastroschisis with evisceration of almost the whole of intestine, urinary bladder, a part of liver and gall bladder (which was completely necrosed).

A 36-hours-old new-born was presented in neonatal surgical emergency department of the Children's Hospital and The Institute of Child Health, Lahore. The weight of the child was 2.4 kg; he was a term baby and a product of spontaneous vaginal delivery at home in a village setting.

He presented with the evisceration of the entire intestine and urinary bladder. The intestine was massively oedematous. Part of the liver and the gallbladder were also eviscerated; liver was blackish maroon in colour and gall bladder was black [Figure 1].

Patient was resuscitated and had operation. At operation, the gall bladder was completely necrosed, and the intestine was very oedematous and matted together. The defect was approximately 3 cm in diameter. A preformed spring loaded silastic silo was applied and a drain placed in the abdominal cavity. The patient developed multi organ failure two days later and died.



Figure 1: The figure is showing liver (L), gall bladder (G), urinary bladder (U), and intestine eviscerated. The gall bladder was necrosed

The first clear description of gastroschisis was by Calder in 1733. The first survivors were reported by Vissick in 1873, and Fear in 1878.[2]

The defect in gastroschisis is usually small (<4cm) as compared to omphalocele.[3] In our case the defect was about 3cm.

The evisceration is usually of mid gut and rarely other viscera are found. Other viscera that may eviscerate are stomach, colon, urinary bladder, gonads, liver whole or some part of it, and gallbladder.[3,7,12–15] Matsumoto *et al*.[7] and Ikhena *et al*.[14] described effect of urinary bladder evisceration on the urinary tract. Both of these studies described hydronephrosis resulting from urinary bladder evisceration that settled down after closure of the defect. Drinnen *et al*.[12] described gallbladder evisceration in a patient with gastroschisis in 1997, but the gallbladder was not gangrenous.

The complications of gastroschisis include intestinal gangrene (due to volvulus), massive intestinal and eviscerated organ oedema, short bowel syndrome, bowel obstruction due to adhesion, gastro-oesophageal reflux, necrotizing enterocolitis, prolonged ileus, sepsis, malabsorption and wound infection.[8–11] In the index

case the whole of intestine and urinary bladder were massively oedematous, the gall bladder was gangrenous, and even part of the eviscerated liver had changed its color due to ischemia.

The intestine is usually oedematous, matted and a thick peel is present over it. Some studies depicted gastroschisis as antenatal event. After 20 minutes due to exposure to environment or mesenteric venous occlusion at the level of defect, characteristic changes start taking place and worsens as the time passes.[3] In our case we received the newborn patient 36 hours after delivery; this time interval might be responsible for the massive oedema of the intestine.

The treatment options available are primary closure of the defect soon after birth and if facial closure is not possible, then only skin closure is a better option; a staged reduction of intestine by applying silastic silo is another option. If atresia is encountered, it is usually left uncorrected or stomas are formed instead of doing anastomosis, later on after 3–4 weeks when defect becomes healed gut continuity is restored.[3]

We tried staged approach because whole of the intestine and urinary bladder was massively oedematous, and the gallbladder was gangrenous and necrosed to such an extent that we were unable to dissect it for cholecystectomy.

There are a very few reports about evisceration of urinary bladder and one report about the evisceration of gall bladder.[7,12,14] Rarer still is the evisceration and necrosis of the gallbladder. This will be the first case report of its kind describing evisceration and necrosis of gall bladder, evisceration of a part of liver and evisceration of urinary bladder to the best of knowledge of the authors.

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