Pediatr Surg Int (2003) 19: 217–219
DOI 10.1007/s00383-002-0923-z

CASE REPORT

A. Shah · A.V. Shah

Laparoscopic gastropexy in a neonate for acute gastric volvulus

Accepted: 30 April 2002 / Published online: 28 March 2003

Abstract A 26-day-old male neonate presented with an acute gastric volvulus which was reduced with a nasogastric catheter. The patient was then subjected to laparoscopic anterior gastropexy. Six months after the procedure, the child is thriving and completely free of symptoms. We present this case as the first wherein a laparoscopic gastropexy has been done for gastric volvulus in a neonate. We have found the procedure acceptable for the treatment of neonates with gastric volvulus.

Keywords Gastric volvulus · Gastropexy · Laparoscopy · Neonate

Introduction

Acute gastric volvulus in childhood is uncommon and very rare in neonates [1]. Delay in the diagnosis can result in gastric ischemia and perforation [2,3]. Anterior gastropexy is redommended to prevent recurrence. Of late, laparoscopic gastropexy has been used for the treatment of this condition in children [4,5]. We report the case of a 28-day-old neonate who presented with acute gastric volvulus and was treated successfully by laparoscopic anterior gastropexy.

A. Shah
Department of Pediatric Surgery,
K.M. School of Postgraduate Medicine & Research,
N.H.L. Municipal Medical College,
V.S. Hospital, Ahmedabad, India

A.V. Shah (✉)
"Anicare", 13 Shantisadan Society,
Nr. Parimal Garden,
Nr. Doctor House, Ellisbridge,
380006 Ahmedabad, India
E-mail: anirudhshah@icenet.net

Case Report

A 28-day-old male neonate weighing 2.3 kg presented with the history of excessive crying, recurrent vomiting and upper abdominal distension. Plain X-ray of the abdomen showed a dilated stomach. The child was admitted an an 8-F nasogastric tube was negotiated into the stomach, after which the symptoms promptly improved. Upper gastrointestinal contrast studies showed the greater curvature of the stomach folded upwards and to the right

Fig. 1 Upper gastrointestinal studies showing the greater curvature of the stomach folded upwards and to the right, suggestive an organoaxial volvulus of the stomach

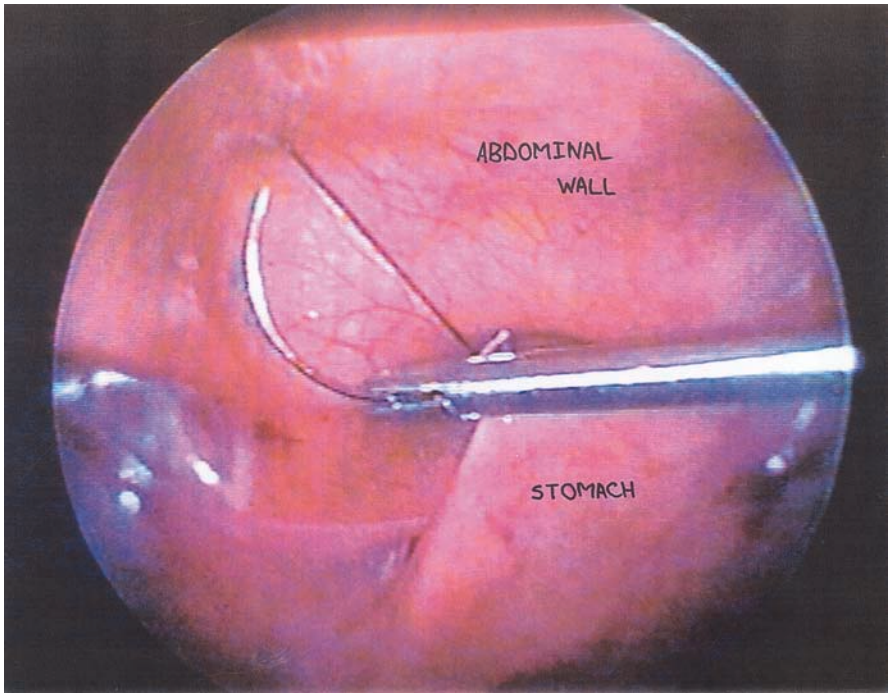

Fig. 2 Port sites for laparoscopic gastropexy

with the antrum and duodenal cap directed downwards and backwards suggestive of an organoaxial volvulus of the stomach (Fig. 1). There were no associated amonalies such a diaphragmatic hernia or eventration, malrotation or hiatal hernia. The child was subjected to laparoscopy. CO_2 pneumoperitoneum was created with the help of a Veress needle to a presssure of 6 mmHg. A 3-mm port was introduced at the umbilicus for the 0-deg telescope and one 5-mm and one 3-mm port were introduced in the right hypochondium and in the left lumbar region respectively (Fig. 2). We used 3-0 polyglactin sutures to perform the laparoscopic gastropexy. The needle was introduced through the anterior abdominal wall. A bite of the seromuscular layer of the anterior wall of the stomach near the greater curvature was taken, preventing injury to the vascular arcade. The needle was then brought out through the anterior abdominal wall near the site of introduction, and an extra corporeal knot taken, effecting a gastropexy (Fig. 3). The knots were buried subcutaneously by placing a tiny stab incision over the skin. The total operating time was 35 min. The postoperative period was uneventful. Oral feeding was started after 8 h and the child was discharged on the 3rd postoperative day. There has been no recurrence of symptoms after 6 month' follow-up and the child has gained weight and is thriving.

Discussion

Acute gastric volvulus in neonates is rare [1]. The amount of twist varies from 180 deg to 360 deg and is assiociated with closed loop obstruction and the risk of strangulation. Lesser degrees of torsion are probably common and associated with transient vomiting but spontaneous resolution is normal [6]. Organoaxial volvulus accounts for two thirds of the reported cases. Acute gastric volvulus requires prompt decompression by the nasogastric tube followed by anterior gastropexy to prevent recurrence. The different treatment modalities described for the neonate are an anterior gastrostomy or an open anterior or posterior gastropexy along with treatment of the primary pathology if any. In the present case, the child had an idiopathic gastric volvulus with no other associated anomaly, which prompted us to

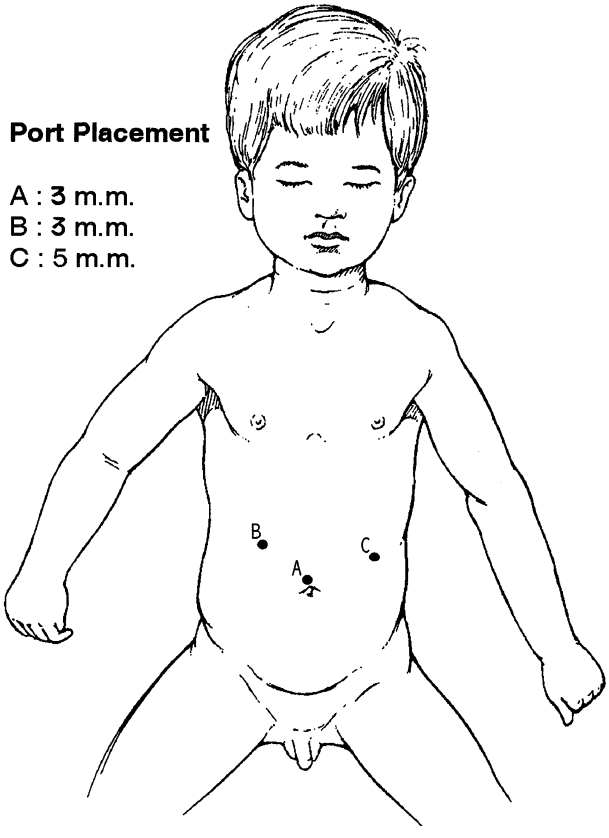

Fig. 3 Laparoscopic view of fixation of the stomach to the anterior abdominal wall

consider doing a laparoscopic anterior gastropexy. We used three interrupted 3-0 polyglactin sutures, which were placed over the greater curvature of the stomach.

The site for insertion of the needle through the anterior abdominal wall was marked by pushing on the external abdominal wall under laparoscopic guidance at the site of gastropexy. After a satisfactory seromuscular bite was taken over the stomach wall, the needle was brought out through the abdominal wall at the site of introduction, thus pulling the stomach towards the anterior abdominal wall. Simultaneous tying of all the three knots after the stitches had been taken at the desired sites satisfactorily further eased the procedure. We believe that laparoscopic gastropexy is an excellent technique not only for children but also for neonates in the management of gastric volvulus. We suggest placing of extracorporeal sutures for small patients, especially neonates in whom there is a small working space, which would make the procedure much easier and safer. This is probably the first reported case of this procedure done in an neonate.

References

1. Howard ER, Stringer MD (1996) Gastric volvulus. In: Puri P (ed) Newborn surgery, 1st edn. Butterworth-Heinemann, Oxford, pp 272–276
2. Cole BC, Dickinson SJ (1971) Acute volvulus of stomach in infants and children. Surgery 70:707–717
3. Miler DL, Pasquale MD, Seneca RP et al. (1991) Gastric volvulus in the pediatric population. Arch Surg 126:1146–1149
4. Odaka A, Shimomura K, Fujioka M et al. (1999) Laparoscopic gastropexy for acute gastric volvulus: a case report. J Pediatr Surg 34:477–478
5. Cameron BH, Blair GH (1993) Laparoscopic-guided gastropexy for intermittent gastric volvulus. J Pediatr Surg 28:1628–1629
6. Eek S, Hagelsteen H (1958) Torsion of the stomach as a case of vomiting in infancy. Lancet 1: 26–28