



A Perforated Peritonitis Revealing an Isolated Congenital Microgastria in Premature Newborn Patient: A Case Report

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Abstract

Congenital microgastria is an extremely rare anomaly, which is due to failure of gastric development, and causes a tubular stomach with reduced capacity¹. It can be isolated or associated with other congenital anomalies.

In our case, we report a perforated peritonitis revealing an isolated congenital microgastria in premature newborn who successfully underwent a surgical cure with gastropexy. The patient had an uneventful post-operative recovery.

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Case Report

An extreme premature newborn girl of 900 gram required Neonatal Intensive Care Unit (NICU) in the view of prematurity (30 weeks' gestation), and respiratory distress, she was born by cesarean section due to sever preeclampsia. The Apgar score was 9/10. Blood gases showed respiratory acidosis (pH, 7.22; PCO₂, 43 mm Hg; and Po₂, 158mm Hg). The blood cell count was normal, and the chest X ray was normal. Trans fontanel and cardiac ultrasonographic findings were normal. An umbilical veinous catheter was placed, a CPAP therapy and treatment was initiated with the following antibiotics: ampicillin (100mg/kg every 12 hours), cefotaxime (100 mg/Kg every 12 hours), and gentamycin (3 mg/kg per day).

48 hours within the initiation of therapy the respiratory distress was ameliorated, and the blood gas levels values returned to normal. On day 4 of intensive care, the newborn presented an abdominal distension, The clinical picture worsened with the development of apnea and sign of sepsis. Abdominal radiograph demonstrated large pneumoperitoneum. Mechanical ventilation therapy, with vasoactive drugs were started, and metronidazole (15mg/kg/12H) antibiotics were added. The blood cell count showed Leukocytosis (49 X 10³ leukocytes/mm³) with neutrophilic predominance. Subsequently, c-reactive protein climbed from 1mg/L to 120mg/L, and the premature was admitted to the operative room for emergency laparotomy for suspicion of perforated digestif tract.



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The per operating finding demonstrates a peritonitis with perforated microgastria which was cured with double running suture (vicryl 5/0) and gastropexy.

The post operative outcomes were simple, and she will be scheduled later for a surgical augmentation of the existing stomach reservoir.



Figure 1: Intraoperative clinical features of the perforated stomach due to the microgastria.



Figure 2: Abdominal Xray showing an enormous pneumoperitoneum indicating severe perforation.

Discussion

The microgastria is an extremely rare anomaly. There are Less than 100 patients reported in the literature [1], and only few reported cases of isolated microgastria. At least no case of microgastria has been reported at this extreme age, nor revealed by a vital complication such as peritonitis.

Dide first mentioned it in 1894, in an epileptic woman who has smaller, and abnormally oriented stomach at autopsy [2,3], In 1971, Schulz and Newman, illustrated it as a "new syndrome" [4,5]. it results from a malformation of the greater omentum due to incomplete embryogenesis of the dorsal mesogastrium. This occurs during the fourth and fifth week of fetal development leading to a tubular stomach that has a small reservoir capacity [6,7], The low reservoir capacity of the stomach generates the megaesophagus, the incompetent gastroesophageal sphincter, vomiting, malnutrition, recurrent respiratory tract infections, and delayed growth [8,9].

It can occur either as isolated or, is commonly, associated with other anomalies, such as asplenia, absence of the gallbladder, malrotation, situs inversus, heart defects, transverse liver, renal anomalies, laryngo-tracheobronchial clefts, hypoplasia of the radius or ulna, oligodactyly, micrognathia, anophthalmia, central nervous system anomalies, Hirschsprung's disease, imperforate anus, and pyloric atresia [10-12].

The combination of microgastria and asplenia can be explained by the same origin of the spleen and stomach derived from the embryonic dorsal mesogastrium. The association of limb, cardiac, tracheoesophageal, vertebral, and renal anomalies with congenital microgastria has been attributed to impairment of early mesodermal development [13], in our case microgastria was found isolated, there were no abnormality detected.

Microgastria is easily diagnosed with upper gastrointestinal contrast (UGI) showing a small tube or saccular midline stomach, which is frequently associated with an incompetent lower esophageal sphincter and, in some cases, a dilated esophagus [14].

In our case, the contrast of upper gastrointestinal could not be performed due to vital emergency. And the diagnosis was made in the operating room.

Congenital microgastria can be successfully managed without surgery in moderate cases by administering small, frequent nasogastric feedings. With various levels of success, several surgical procedures such as gastrojejunostomy, intestinal loop interposition, and feeding jejunostomy have been described. The Hunt-Lawrence pouch, a double-lumen Roux-en-Y jejunal pouch, has typically been suggested for stomach augmentation (**Figure 3**) [15,16].

Because the stomach is unlikely to naturally enlarge or grow when microgastria exists as an isolated abnormality, early gastric augmentation is recommended. The patient's age, severity of symptoms, and any associated abnormalities are important variables in assessing whether gastric augmentation should be performed. The few published cases agrees that The Hunt-Lawrence pouch is described to be the most efficient treatment [17].

With our patient, given the vital prognosis and the very early revelation of the microgastria, a suture of the perforation was performed. Then an increase of the gastric reserve by the Hunt Lawrence pouch was programmed after stabilization of the patient, and weight increasing.

Long term forecasts in patients with isolated microgastric is unknown because so few cases have been communicated.

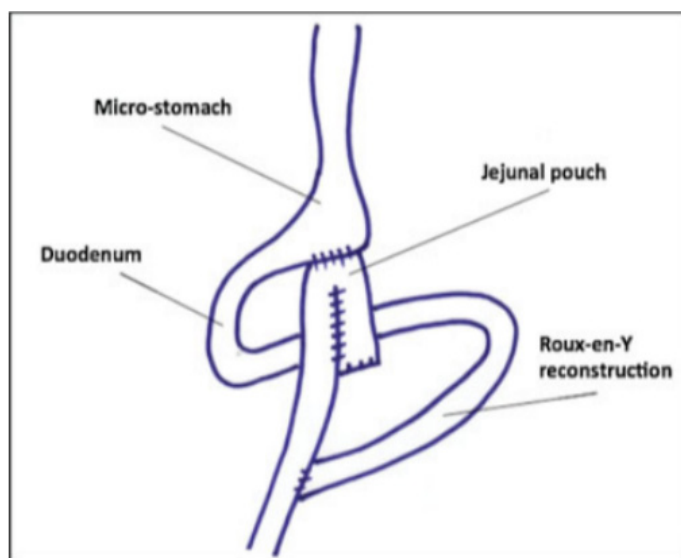


Figure 3: Shema of hunt Lawrence pouch technique [18].

Conclusion

Congenital microgastric is an uncommon condition that typically coexists with other congenital defects or, less frequently, manifests on its own.

Perforated peritonitis has never been described as a complication of microgastric which leaves this pathology, treatment and the prognosis open to researchers and discussions.

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