Infantile hypertrophic pyloric stenosis (PS)

Pyloric stenosis (PS): Is the most common surgical cause of vomiting in infancy.

**Incidence:**
The incidence of pyloric stenosis has been increasing from approximately 1:900 live birth reported in 1957 to 1:150 reported in 1988. Male infants are affected 4 times more frequently than are girls, PS has an increase incidence in babies with intestinal malrotation, obstructive uropathy, and esophageal atresia.

**Pathophysiology:**
The pyloric musculature in PS demonstrates hyper-trophy without hyperplasia and it mainly occurs in the circular muscle wall of the pyloric canal.

**Clinical presentation:**
The typical age at presentation is 2 to 8 weeks. In previously premature infants, which account for 10% of cases, it typically occurs when the child reaches 42 to 50 week of post conceptual age.
The child has postprandial, Forceful, non bilious vomiting, commonly referred as "Projectile". Rarely The emesis may be bloody from gastritis or esophageal trauma. The infant typically is hungry after vomiting, eager to eat, only to vomit once again.
Less vomiting occurs with low curd feedings such as breast milk, or dextrose with water.

The progression, if not recognized, will lead to weight loss, often below birth weight, all signs of dehydration, anemia, indirect hyperbilirubinemia and irritability.

**Diagnosis:**

1. **Physical examination:** The abdomen is scaphoid, particularly after recent emesis gastric waves an be seen through the abdominal wall, increase skin turgor. The hypertrophied pylorus can be palpated in the right upper quadrant occurs in more than 90% of cases. Palpation of the hypertrophied pylorus, which has the feel of an "olive" mass confirms the diagnosis, and no farther imaging is necessary.

2. **Ultra sound:** U/S has almost exclusively replaced the upper GI. Contrast series as the confirmatory study. U/S shows increase pyloric wall thickness in excess of 3mm, a length in excess of 15mm, along with a classic appearance of the narrowed pyloric channel and redundant thickened mucosa.

3. **Upper Gastrointestinal series:** positive studies will show a narrow pyloric channel, called "string sign" and *shoulder sign* which is caused by the impression of the pyloric into the duodenum.
Differential Diagnosis:

1. over feeding.
2. Gastroesophageal reflux.
5. pyloric atresia.
6. duodenal atresia.
7. annular pancreas.

Electrslytes Disturbences in PS:

The most common abnormality is hyponatremic, hypochloremic, hypokalemic metabolic alkalosis due to massive emesis with paradoxical aciduria. The loss of gastric secretions lead to dehydration, as a result, through aldosterone-stimulated absorption, K⁺ is excreted in urine in an attempt to conserve Na⁺. Wild dehydation & electrolytes disturbances can be corrected pre-operatively with 0.45% normal saline with 5% dextrose. Sever disturbances require correction with 0.9% normal saline bilious of 10 to 20 ml/kg Followed by administration of 0.9% N/S in 5% dextrose solution. Fluid should be administration at a rate of 25% to 50% above maintenance.
Investigations:

1. CBC.
2. S.K⁺
3. S.NA⁺
4. S.cl⁻
5. Blood urea.
6. GOE

Treatment:

Operative → pylormyotomy (Ramstedt operation)

Thanks