Anorectal Anomalies

Anorectal anomalies include the very common anal stenosis, and the uncommon anorectal malformations (atresias). Although 25-33% of newborns have some degree of anal stenosis, only 10% have any interference with defecation, and most dilate without treatment. Anorectal malformations are found in about 1:5000 live births. They are commonly subdivided into low, intermediate and high anomalies. (Rectal agenesis is usually grouped with bowel atresias and stenoses.)

Types

- Anal Stenosis
- Anorectal Malformation

1. Membranous anal atresia
2. Anal agenesis (anal atresia)
3. Anorectal agenesis (anorectal atresia)

Membranous Anal Atresia

Low anorectal malformations have a **normally positioned anus** and a thin layer of tissue at the end of the anal canal. Covered anus with anocutaneous fistula more common than the rare imperforate anus.

Anal Agenesis (anal atresia)

Intermediate anorectal malformations have a blind end of the anal canal located **below the puborectalis muscle**. More than 90% of anal ageneses are associated with a fistula (e.g., anocutaneous, anoperineal, or anovestibular fistula) that is sometimes described as an "ectopic anus". Anal agenesis is slightly less common than anorectal agenesis (46% of ageneses). Anal agenesis is the most common defect in females with anorectal malformations (greater than 80%).

Anorectal Agenesis (anorectal atresia)

High anorectal malformations have a blind end of the rectum located **above the puborectalis muscle**. More than 80% of anorectal ageneses are associated with a fistula (e.g., rectourethral, rectovesicular, rectovestibular, or rectovaginal fistula). Anorectal agenesis is slightly more common than anal agenesis (54% of ageneses). Anorectal agenesis is the most common defect in males with anorectal malformations (about 75%). Rarely, in females with anorectal agenesis, the lower vagina may also fail to form. Thus, in so-called persistent **cloaca**, an undivided cloacal canal may be a common outlet for the urethra, vagina and rectum.

Theories of developmental defects underlying anorectal malformation

The pathogenesis of these anomalies is controversial and it is likely that different anomalies arise in different manners.

- Membranous anal atresias are often attributed to persistence of the cloacal membrane or persistence of the anal epithelial plug (the "anal membrane")
- Vascular accidents and "failure to recanalize" the rectum and anal canal are sometimes cited as possible causes of anorectal malformation. Vascular accidents may be the most popular explanation for rectal agenesis (rectal atresia), as it is for atresias of most of the rest of the intestines (except the duodenum), but there is little evidence for epithelial overgrowth in normal development of this region (except for the anal plug).
- The most likely explanations for anorectal and anal ageneses include:
    - Abnormal formation of the urorectal septum,
    - Ectopic location of the anal opening, and
    - Excessive obliteration of the embryonic tailgut and dorsal cloaca.

External links

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