Hematometra and Hematocolpos: Ultrasound Findings

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An imperforate hymen is the most frequent female genital anomaly. Retained secretions and menstrual blood may distend the vagina and uterus to produce hematocolpos and hematometra resulting in an abdominal mass. An underlying hematometra should be included in the differential diagnosis of a pelvic mass with primary amenorrhea. The application of ultrasonography is most helpful since this technique can demonstrate the retained old blood as an echo-free cystic structure [1]. In this case, an ultrasound examination confirmed the clinically suspected hematocolpos and disclosed extension of the accumulated blood into the distended uterus, producing the palpable abdominal mass.

Case Report

A 15-year-old girl experienced periodic lower abdominal pain for 3 months. The lower abdominal pain became more severe and was accompanied with increasing nausea and vomiting, necessitating her visit to the Group Health emergency room. Physical examination of the lower abdomen showed a tender midline 12 × 8 cm mass. There was no rebound or guarding. Pelvic examination revealed an intact hymen that was bulging at the introitus. On rectal examination the vagina bulged toward the rectum. History indicated no menstrual periods. Complete blood cell count and electrolytes were normal. A 35 × 43 cm film of the abdomen showed normal configuration of the kidneys.

The patient was referred to the ultrasound department. Images were obtained with a Picker 80L unit with a 2.25 MHz transducer and recorded with a Dunn camera (Model 600, Dunn Instruments, Inc., San Francisco, Calif.). The study showed an ovoid midpelvic sonolucent mass extending from the area of the visible upper vagina superiorly to the level of the umbilicus (fig. 1). A separate uterus could not be seen. The bladder was not distended. The ultrasound findings, history, and physical examination suggested an underlying hematometra and hematocolpos.

The same day, the patient underwent a hymenotomy under general anesthesia. More than 500 ml of viscous bloody fluid was removed through the hymenotomy. After removal of all the fluid, the physical pelvic examination revealed the uterus to be significantly diminished. Both ovaries were of normal size on palpation. An ultrasound examination 3 weeks later showed the uterus to be only still slightly enlarged (fig. 2).

Discussion

Normally the hymen originates from the urogenital sinus at the origin of the embryonic vagina. An imperforate hymen occurs if a normal lumen fails to develop [1-3]. A simple imperforate hymen is usually not associated with other congenital abnormalities [4-6]. A transverse vaginal septum, or a double or separate vagina is frequently accompanied with abnormalities of the urinary tract, such as ipsilateral renal agenesis or obstruction of

Fig. 1.—Hematometra and hematocolpos. A, Transverse scan 2 cm above symphysis pubis. Midpelvic mass (U) represents blood-filled uterus. B, Longitudinal scan 1 cm left of symphysis pubis. Distended vagina (V) and uterus (U), umbilical level (arrowhead), bladder not distended (B).

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one ureter or the urethra by the uterine or unilateral vaginal blood-filled mass.

An imperforate hymen is usually discovered at the onset of puberty when symptoms arise due to the accumulation of menstrual blood. Cyclic lower abdominal pain is commonly noted. A large amount of blood can accumulate in the vagina, uterus, and fallopian tubes resulting in hematocolpos, hematometra, and hematosalpinx. A secondary infection leading to closure of the fallopian tubes may occur.

A pelvic sonogram will show the vagina as an echo-free tubular structure with a bulging posterior fornix. The blood-filled uterus appears as an enlarged pelvic mass with an echo free lumen. An accompanying echo-free hematosalpinx may also be demonstrated by careful examination.

Fig. 2.—3 weeks after hymenotomy: uterus only still slightly enlarged. A, Transverse scan 1.5 cm above symphysis pubis. Distended bladder (B), uterus (U). B, Midline sagittal scan. Uterus (U), vagina (V), bladder (B).

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