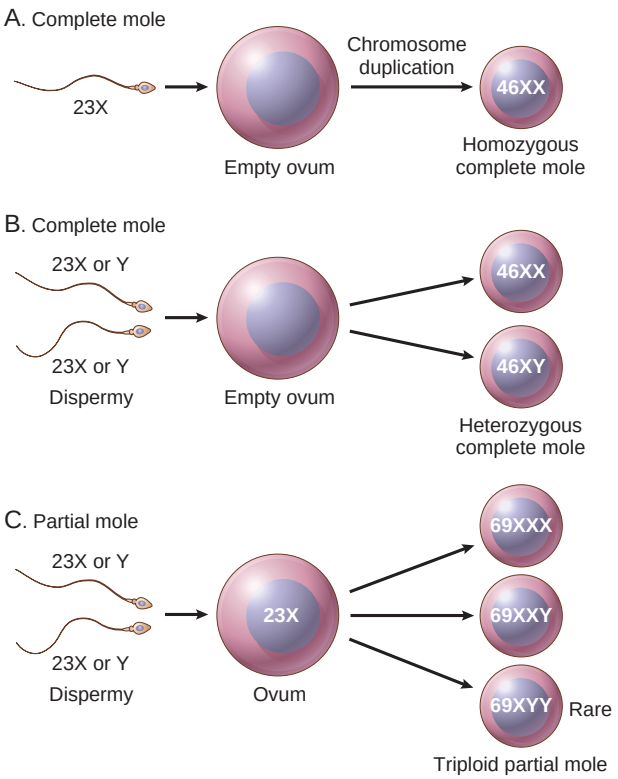

Figure 22-52 Origin of complete and partial hydatidiform moles. **A,** Complete moles most commonly arise from fertilization of an empty ovum by a single sperm that undergoes duplication of its chromosomes. **B,** Less commonly, complete moles arise from dispermy in which two sperm fertilize an empty ovum. **C,** Partial moles arise from two sperm fertilizing a single ovum.

Ninety percent have a 46,XX karyotype stemming from the duplication of the genetic material of one sperm (a phenomenon called androgenesis). The remaining 10% result from the fertilization of an empty egg by two sperm; these may have 46,XX or 46,XY karyotype. In complete moles the embryo dies very early in development and therefore is usually not identified. Patients have 2.5% risk of subsequent choriocarcinoma and 15% risk of persistent or invasive mole.

Partial Mole

Partial moles result from fertilization of an egg with two sperm (Fig. 22-52*C*). In these moles the karyotype is triploid (e.g., 69,XXY) or occasionally tetraploid (92,XXXY). Fetal tissues are typically present. Partial moles have an increased risk of persistent molar disease, but are not associated with choriocarcinoma.

MORPHOLOGY

The classic appearance of hydatidiform moles is that of a delicate, friable mass of thin-walled, translucent, cystic, grapelike structures consisting of swollen edematous (hydropic) villi (Figs. 22-53 and 22-54). In complete mole, the microscopic abnormalities involve all or most of the villous tissue. The chorionic villi are enlarged, scalloped in shape with central cavitation (cisterns), and are covered by extensive trophoblast proliferation that involves the entire circumference of the villi. In contrast, in partial moles, only a fraction of the villi are enlarged and edematous. The trophoblastic hyperplasia is focal and less marked than in complete moles.

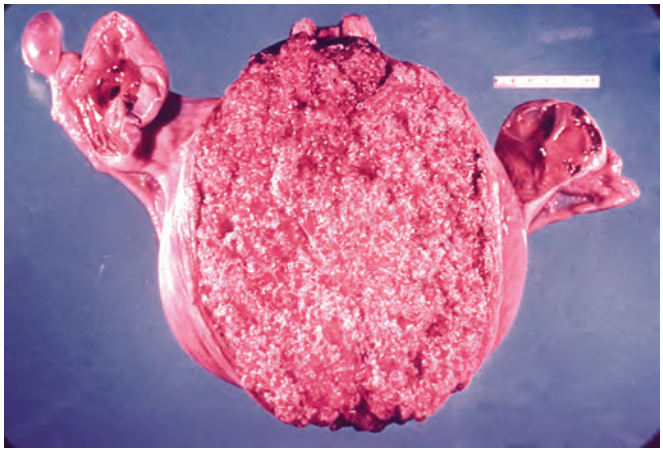

Figure 22-53 Complete hydatidiform mole. Note marked distention of the uterus by vesicular chorionic villi. Adnexa (ovaries and fallopian tubes) are visible on the *left* and *right side* of the uterus.

Clinical Features. Most women with partial and early complete moles present with spontaneous miscarriage or undergo curettage because of ultrasound findings of abnormal villous enlargement. In complete moles, human chorionic gonadotropin (HCG) levels greatly exceed those of a normal pregnancy of similar gestational age. In addition, the rate at which HCG levels rise over time in molar pregnancies exceeds those seen with normal single or even multiple pregnancies. Most moles are successfully removed by curettage. The patients are subsequently monitored for 6 months to a year to ensure that HCG levels decrease to non-pregnant levels. Continuous elevation of HCG may be indicative of *persistent or invasive mole*, which develops in up to 15% of molar pregnancies and is seen more frequently with complete moles. In addition, 2.5% of complete moles give rise to gestational choriocarcinoma.

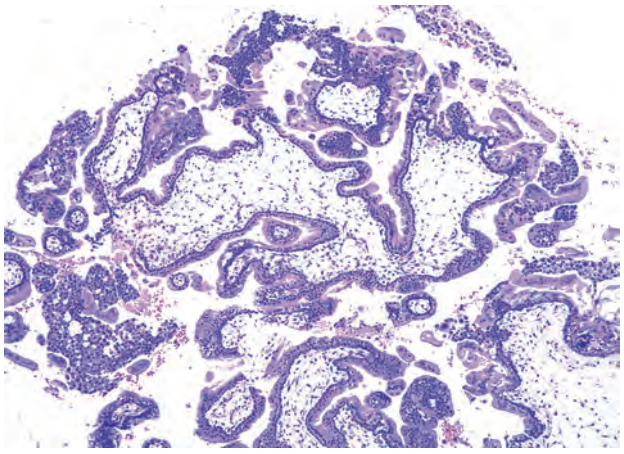

Figure 22-54 Complete hydatidiform mole demonstrating marked villous enlargement, edema, and circumferential trophoblast proliferation.