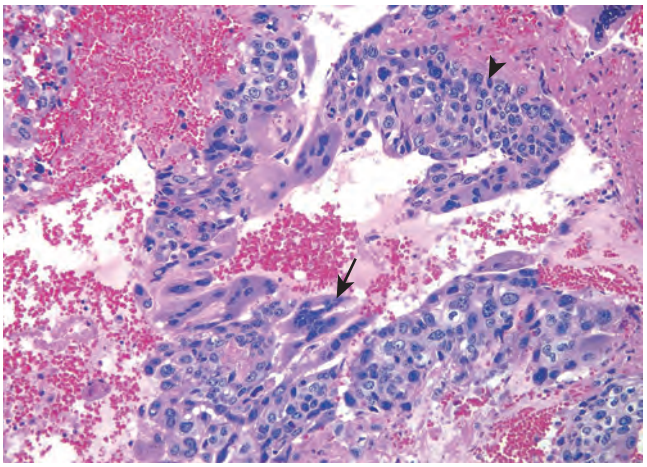

Figure 21-27 Choriocarcinoma shows cytotrophoblastic cells *(arrowhead)* with central nuclei and syncytiotrophoblastic cells *(arrow)* with multiple dark nuclei embedded in eosinophilic cytoplasm. Hemorrhage and necrosis are seen in the *upper right field*.

Choriocarcinoma

Choriocarcinoma is a highly malignant form of testicular tumor. In its "pure" form, choriocarcinoma is rare, constituting less than 1% of all germ cell tumors.

MORPHOLOGY

Choriocarcinomas often cause no testicular enlargement and are detected only as a small palpable nodule. Typically, these tumors are small, rarely larger than 5 cm in diameter. Hemorrhage and necrosis are extremely common. Histologically the tumors contain two cell types, **syncytiotrophoblasts** and **cytotrophoblasts** (Fig. 21-27). Syncytiotrophoblasts are large multinucleated cells with abundant eosinophilic vacuolated cytoplasm containing HCG, which is readily detected by immunohistochemistry. Cytotrophoblasts are more regular and tend to be polygonal, with distinct borders and clear cytoplasm; they grow in cords or masses and have a single, fairly uniform nucleus. This neoplasm can also arise in the female genital tract (Chapter 21).

Teratoma

The designation *teratoma* refers to testicular tumors having various cellular or organoid components reminiscent of the normal derivatives of more than one germ layer. They may occur at any age from infancy to adult life. Pure forms of teratoma are fairly common in infants and children, second in frequency only to yolk sac tumors. In adults, pure teratomas are rare, constituting 2% to 3% of germ cell tumors. However, the frequency of teratomas mixed with other germ cell tumors is approximately 45%.

MORPHOLOGY

Grossly, teratomas are usually large, ranging from 5 to 10 cm in diameter. Because they are composed of various tissues, the gross appearance is heterogeneous with solid, sometimes cartilaginous, and cystic areas (Fig. 21-28). Hemorrhage and necrosis usually indicate admixture with embryonal carcinoma, choriocarcinoma, or both.

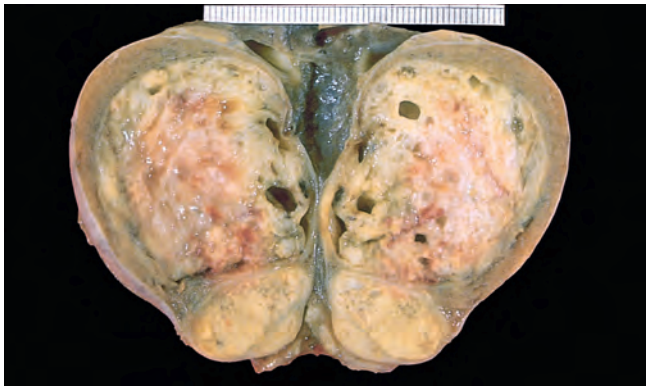

Figure 21-28 Teratoma of testis. The variegated cut surface with cysts reflects the multiplicity of tissue types found histologically.

Teratomas are composed of a heterogeneous, helter-skelter collection of differentiated cells or organoid structures, such as **neural tissue, muscle bundles, islands of cartilage, clusters of squamous epithelium, structures reminiscent of thyroid gland, bronchial or bronchiolar epithelium, and bits of intestinal wall or brain substance,** all embedded in a fibrous or myxoid stroma (Fig. 21-29). Elements may be mature (resembling various adult tissues) or immature (sharing histologic features with fetal or embryonal tissue).

Rarely, malignant non–germ cell tumors arise in teratomas, a phenomenon that is referred to as "teratoma with malignant transformation". Transformation may take the form of a squamous cell carcinoma, mucin-secreting adenocarcinoma, sarcoma, or other cancers. The importance of recognizing a non–germ cell malignancy arising in a teratoma is that these secondary tumors are chemoresistant; thus, the only hope for cure resides in the resectability of the tumor. These non–germ cell malignancies retain isochromosome 12p, proving a clonal relationship to the preceding teratoma.

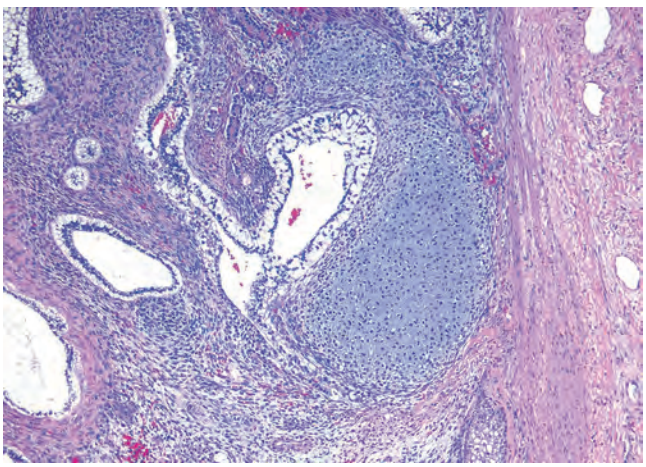

Figure 21-29 Teratoma of the testis consisting of a disorganized collection of glands, cartilage, smooth muscle, and immature stroma.