43 Thymus

The thymus, along with the lower pair of parathyroid glands, is derived from the third and fourth pharyngeal pouches. The right and left halves of the gland fuse to form a pyramid-shaped organ enclosed by a thin fibrous capsule. The thymus has a vital location adjacent to the important organs of the mediastinum. The gland usually sits in the anterosuperior portion of the mediastinum, with the base of the thymus sitting on the pericardium and the upper poles of each lobe extending superiorly into the neck.

Your dissection should start with what is perhaps the most important step in examining the thymus—a careful examination of the surface of the specimen. Is the organ well encapsulated, or is there evidence of a tumor with invasion into adjacent structures? Are pieces of lung, pericardium, or blood vessels present? Document the degree of encapsulation. Next, weigh the specimen, measure it in all three dimensions, and ink the surfaces of the gland. The gland can then be sectioned at 2- to 3-mm intervals. In infants, the cut surface of the thymus is pink, but by adulthood much of the parenchyma has been replaced by yellow fat. Describe the cut surface of the gland. Is it uniform and lobated, cystic or solid? Is there evidence of necrosis or fibrosis? Any grossly identifiable lesions should be measured, and sections should be submitted from each lesion to demonstrate the relationship of the tumor to adjacent structures, to the inked margins, and to any attached tissues. Because invasion into adjacent organs is a critical feature used to identify malignant thymomas, sampling should be directed to areas suspicious for capsular invasion. Moreover, because thymomas can be histologically heterogeneous, it has been suggested by Moran and Suster[21] that a minimum of five sections should be submitted from all thymomas. If no grossly identifiable lesions are noted, submit four representative sections for histology. Save the specimen because you may have to go back to it, depending on the patient's clinical history.

Important Issues to Address in Your Surgical Pathology Report on Thymectomies

- What procedure was performed, and what structures/organs are present?
- What are the size and weight of the thymus?
- Is the thymus partially or totally encapsulated?
- What are the type and grade of any neoplasms identified?
- If a tumor is present, does it extend to a margin or into adjacent structures?