

**Table of Contents:**

Soft Tissue Introduction

Introduction and Overview

Gross Examination

Grading and Staging

Ancillary Techniques

Soft Tissue Immunohistochemistry

Molecular Features of Soft Tissue Tumors

Diagnostic Approach to Soft Tissue Tumors

Overview

Biopsy and Resection of Soft Tissue Tumors

Clinical Approach

Age- and Location-Based Approach to Diagnosis

Histologic Approach

Pattern-Based Approach to Diagnosis

Feature-Based Approach to Diagnosis

Tumors of Adipose Tissue

Benign

Lipoma

Lipomatosis of Nerve

Synovial Lipomatosis

Angiolipoma

Spindle Cell/Pleomorphic Lipoma

Chondroid Lipoma

Myolipoma

Hibernoma

Myelolipoma

Lipoblastoma

Intermediate, Locally Aggressive

Atypical Lipomatous Tumor/Well-Differentiated Liposarcoma

Atypical Spindle Cell Lipomatous Tumor

Malignant

Dedifferentiated Liposarcoma

Myxoid Liposarcoma

Pleomorphic Liposarcoma

Fibroblastic/Myofibroblastic Lesions

Benign

Nodular Fasciitis

Proliferative Fasciitis/Myositis

Ischemic Fasciitis

Myositis Ossificans

Fibroosseous Pseudotumor of the Digit

Fibroma of Tendon Sheath

Desmoplastic Fibroblastoma

Elastofibroma

Angiofibroma of Soft Tissue

Mammary-Type Myofibroblastoma

Intranodal Palisaded Myofibroblastoma

Superficial CD34(+) Fibroblastic Tumor

Pleomorphic Fibroma

Dermatomyofibroma

Storiform Collagenoma

Keloid

Nuchal-Type Fibroma

Intermediate (Locally Aggressive)

Palmar/Plantar Fibromatosis

Desmoid-Type Fibromatosis

Intermediate (Rarely Metastasizing)

Dermatofibrosarcoma Protuberans

Solitary Fibrous Tumor

Low-Grade Myofibroblastic Sarcoma

Inflammatory Myofibroblastic Tumor

Myxoinflammatory Fibroblastic Sarcoma

Malignant

Adult-Type Fibrosarcoma

Myxofibrosarcoma

Low-Grade Fibromyxoid Sarcoma

Sclerosing Epithelioid Fibrosarcoma

Pediatric Fibroblastic/Myofibroblastic Tumors

Benign

Fibrous Hamartoma of Infancy

Calcifying Aponeurotic Fibroma

Calcifying Fibrous Tumor

Inclusion Body Fibromatosis

Hyaline Fibromatosis Syndrome

Fibromatosis Colli

Gardner Fibroma

Intermediate (Locally Aggressive)

Lipofibromatosis

Giant Cell Fibroblastoma

Intermediate (Rarely Metastasizing)

Infantile Fibrosarcoma

Fibrohistiocytic, Histiocytic, and Dendritic Cell Tumors

Benign

Dermatofibroma and Fibrous Histiocytoma

Deep Benign Fibrous Histiocytoma

Localized-Type Tenosynovial Giant Cell Tumor

Diffuse-Type Tenosynovial Giant Cell Tumor

Cellular Neurothekeoma

Xanthomas

Solitary (Juvenile) Xanthogranuloma

Reticulohistiocytoma

Deep Granuloma Annulare

Rheumatoid Nodule

Langerhans Cell Histiocytosis

Extranodal Rosai-Dorfman Disease

Crystal-Storing Histiocytosis

Intermediate (Rarely Metastasizing)

Plexiform Fibrohistiocytic Tumor

Giant Cell Tumor of Soft Tissue

Malignant

Histiocytic Sarcoma

Follicular Dendritic Cell Sarcoma

Interdigitating Dendritic Cell Sarcoma

Smooth Muscle Tumors

Benign

Smooth Muscle Hamartoma

Superficial Leiomyoma

Deep Leiomyoma

Intermediate

Epstein-Barr Virus-Associated Smooth Muscle Tumor

Malignant

Leiomyosarcoma

Pericytic (Perivascular) Tumors

Benign

Glomus Tumors (and Variants)

Myopericytoma

Myofibroma and Myofibromatosis

Angioleiomyoma

Tumors of Skeletal Muscle

Benign

Focal Myositis

Adult Rhabdomyoma

Fetal Rhabdomyoma

Genital Rhabdomyoma

Cardiac Rhabdomyoma

Malignant

Embryonal Rhabdomyosarcoma

Alveolar Rhabdomyosarcoma

Spindle Cell Rhabdomyosarcoma

Sclerosing Rhabdomyosarcoma

Pleomorphic Rhabdomyosarcoma

Epithelioid Rhabdomyosarcoma

Vascular Tumors (Including Lymphatics)

Benign

Papillary Endothelial Hyperplasia

Bacillary Angiomatosis

Congenital Hemangioma

Infantile Hemangioma

Lobular Capillary Hemangioma

Epithelioid Hemangioma

Spindle Cell Hemangioma

Intramuscular Hemangioma

Hobnail Hemangioma

Acquired Tufted Angioma

Microvenular Hemangioma

Sinusoidal Hemangioma

Glomeruloid Hemangioma

Angiomatosis

Lymphangioma

Massive Localized Lymphedema

Intermediate (Locally Aggressive)

Kaposiform Hemangioendothelioma

Intermediate (Rarely Metastasizing)

Papillary Intralymphatic Angioendothelioma

Retiform Hemangioendothelioma

Composite Hemangioendothelioma

Pseudomyogenic Hemangioendothelioma

Atypical Vascular Lesion

Malignant

Epithelioid Hemangioendothelioma

Angiosarcoma

Kaposi Sarcoma

Chondro-Osseous Tumors

Benign

Soft Tissue Chondroma

Synovial Chondromatosis

Malignant

Extraskeletal Osteosarcoma

Extraskelatal Mesenchymal Chondrosarcoma

Peripheral Nerve Sheath Tumors

Benign

Solitary Circumscribed Neuroma

Schwannoma

Neurofibroma

Perineurioma

Hybrid Nerve Sheath Tumor

Granular Cell Tumor

Dermal Nerve Sheath Myxoma

Ganglioneuroma

Neuromuscular Choristoma

Intermediate

Melanotic Schwannoma

Malignant

Malignant Peripheral Nerve Sheath Tumor

Epithelioid Malignant Peripheral Nerve Sheath Tumor

Ectomesenchymoma

Genital Stromal Tumors

Fibroepithelial Stromal Polyp

Angiomyofibroblastoma

Cellular Angiofibroma

Deep (Aggressive) Angiomyxoma

Tumors of Mesothelial Cells



Benign

Adenomatoid Tumor

Multicystic Peritoneal Mesothelioma

Well-Differentiated Papillary Mesothelioma

Malignant

Malignant Mesothelioma

Hematopoietic Tumors in Soft Tissue

Solitary Extramedullary Plasmacytoma

Myeloid Sarcoma

Lymphoma of Soft Tissue

Tumors of Uncertain Differentiation

Benign

Intramuscular Myxoma

Juxtaarticular Myxoma

Superficial Angiomyxoma

Acral Fibromyxoma

Pleomorphic Hyalinizing Angiectatic Tumor

Aneurysmal Bone Cyst of Soft Tissue

Ectopic Hamartomatous Thymoma

Intermediate (Locally Aggressive)

Hemosiderotic Fibrolipomatous Tumor

Intermediate (Rarely Metastasizing)

Atypical Fibroxanthoma

Angiomatoid Fibrous Histiocytoma

Ossifying Fibromyxoid Tumor

Myoepithelioma of Soft Tissue

Phosphaturic Mesenchymal Tumor

Malignant

Synovial Sarcoma

Epithelioid Sarcoma

Alveolar Soft Part Sarcoma

Clear Cell Sarcoma

Perivascular Epithelioid Cell Tumor (PEComa)

Desmoplastic Small Round Cell Tumor

Extraskeletal Ewing Sarcoma

Extraskeletal Myxoid Chondrosarcoma

Extrarenal Rhabdoid Tumor

Intimal Sarcoma

Undifferentiated/Unclassified Sarcomas

Undifferentiated Pleomorphic Sarcoma

Undifferentiated Round Cell Sarcoma With \*CIC-DUX4\*  
Translocation

BCOR-CCNB3 (Ewing-Like) Sarcoma

Mesenchymal Tumors of the Gastrointestinal Tract

Benign Neural Gastrointestinal Polyps

Gastrointestinal Stromal Tumor

Gastrointestinal Schwannoma

Gastrointestinal Smooth Muscle Neoplasms

Inflammatory Fibroid Polyp

Gangliocytic Paraganglioma

Plexiform Fibromyxoma

Malignant Gastrointestinal Neuroectodermal Tumor

Other Entities

Benign

Amyloidoma

Ganglion Cyst

Tumoral Calcinosis

Idiopathic Tumefactive Fibroinflammatory Lesions

Cardiac Myxoma

Cardiac Fibroma

Congenital Granular Cell Epulis

Nasopharyngeal Angiofibroma

Sinonasal Glomangiopericytoma

Ectopic Meningioma

Glial Heterotopia

Intermediate

Paraganglioma

Peripheral Hemangioblastoma

Melanotic Neuroectodermal Tumor of Infancy

Ependymoma of Soft Tissue

Malignant

Metastatic Tumors to Soft Tissue Sites

Neuroblastoma and Ganglioneuroblastoma

Extraaxial Soft Tissue Chordoma

Undifferentiated Embryonal Sarcoma of the Liver

Primary Pulmonary Myxoid Sarcoma

Biphenotypic Sinonasal Sarcoma

Spindle Epithelial Tumor With Thymus-Like Differentiation

Low-Grade Endometrial Stromal Sarcoma