

Introduction

Slide 1 *Picture*
Slide 2 California Tumor Tissue registry
Slide 3 STT Lecture Objectives
Slide 4 Objectives continued...
Slide 5 ...and have a working knowledge...
Slide 6 “Soft tissues are the nonepithelial...”
Slide 7 “Benign soft tissue tumors are common!”
Slide 8 Malignant Soft Tissue Tumors Are Rare
Slide 9 The Armed Forces Institute of Pathology
Slide 10 *Picture*
Slide 11 *Picture*
Slide 12 Soft Tissue and Bone Sarcoma...Infrequent!
Slide 13 Differences
Slide 14 Sarcoma generalizations
Slide 15 Sarcoma generalizations
Slide 16 Sarcoma generalizations
Slide 17 Sarcoma generalizations
Slide 18 Sarcoma generalizations
Slide 19 STT: Three Directions of Change
Slide 20 “Stability” of Mesenchymal Tumors
Slide 21 Mesenchymal dysplasia
Slide 22 Steps in STT diagnosis
Slide 23 Sarcoma generalizations
Slide 24 Is the tumor mesenchymal?
Slide 25 Is it malignant?
Slide 26 Benign or Malignant?
Slide 27 Is it malignant?
Slide 28 Benign or Malignant?
Slide 29 Benign or Malignant?
Slide 30 Microscopic Clues to STT Diagnosis
Slide 31 STT cytomorphology
Slide 32 Growth Patterns: Fascicular
Slide 33 Growth Patterns: Intersecting fascicles
Slide 34 Infiltrating Growth Patterns
Slide 35 Growth Patterns: Staghorn vessels (“HPC”)
Slide 36 Growth patterns: Vascular tumors
Slide 37 Growth Patterns: Vascular tumors
Slide 38 Growth Patterns: Vascular tumors
Slide 39 Growth Patterns: Biphasic
Slide 40 Growth Patterns: Cytoplasmic vacuolation
Slide 41 “...The Diagnosis!”
Slide 42 STT “Diagnostic cell types”
Slide 43 STT associations
Slide 44 Prior Radiation
Slide 45 Tuberous Sclerosis
Slide 46 Neurofibromatosis
Slide 47 Lymphatic stasis
Slide 48 Pain
Slide 49 “Polyp” formation
Slide 50 Diagnostic guidelines for tumor diagnosis

Soft Tissue Tumor Classification

Slide 1 Soft Tissue Tumor Classification

Slide 2 *Picture*
Slide 3 “Mesenchymal tumors may have...”
Slide 4 Fibroblastic/Myofibroblastic
Slide 5 Fibrohistiocytic
Slide 6 Fibrohistiocytic
Slide 7 Adipose Tissue
Slide 8 Smooth Muscle
Slide 9 Striated Muscle
Slide 10 Blood Vessels
Slide 11 Blood Vessels
Slide 12 Lymphatic Vessels
Slide 13 Tenosynovial
Slide 14 Mesothelial/submesothelial fibrous tissue
Slide 15 Peripheral nerves
Slide 16 Peripheral nerves
Slide 17 Ganglia
Slide 18 Bone and cartilage
Slide 19 Unclassified/miscellaneous
Slide 20 Unclassified/miscellaneous
Slide 21 Soft Tissue Tumors
Slide 22 Order of presentation

Fibroblastic Tumors: Case 1 Nodular Fasciitis

Slide 1 Fibroblastic Myofibroblastic, and Fibrohistiocytic...
Slide 2 Case 1
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 1 Nodular Fasciitis
Slide 8 Case 1 Suggested Diagnoses
Slide 9 Nodular Fasciitis
Slide 10 Nodular Fasciitis – Presentation
Slide 11 Nodular Fasciitis: a reactive condition
Slide 12 Nodular Fasciitis: Phases vs. Zones
Slide 13 Nodular Fasciitis – Natural History
Slide 14 Nodular Fasciitis – One of many...
Slide 15 Intravascular Fasciitis
Slide 16 Proliferative fasciitis
Slide 17 Proliferative myositis
Slide 18 Myositis/Panniculitis ossificans

Fibroblastic Tumors: Case 2 Fibromatosis

Slide 1 Case 2
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 Background – Mature collagen
Slide 5 *Picture*
Slide 6 Fibromatosis
Slide 7 Case 2 Suggested Diagnoses
Slide 8 Fibromatosis
Slide 9 Fibromatosis
Slide 10 Fibromatosis; Fibrosarcoma

Fibroblastic Tumors: Case 3 Solitary Fibrous Tumor

Slide 1 Case 3
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 Growth Patterns: Staghorn vessels
Slide 6 *Picture*
Slide 7 Case 3: Solitary Fibrous Tumor
Slide 8 Case 3 Suggested Diagnoses
Slide 9 Solitary Fibrous Tumor
Slide 10 Solitary Fibrous Tumor
Slide 11 Solitary Fibrous Tumor – Origin 7
Slide 12 Both HPC and SFT are CD34 positive...

Fibroblastic Tumors: Case 4 Dermatofibroma Sarcoma Protuberans (DFSP)

Slide 1 Case 4
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 Case 4: Dermatofibrosarcoma Protuberans (DFSP)
Slide 6 Case 4 Suggested Diagnoses
Slide 7 “Large, bulky and protuberant”
Slide 8 Dermatofibrosarcoma Protuberans
Slide 9 “Virtually no cellular pleomorphism”
Slide 10 Minimal epidermal hyperplasia
Slide 11 Honeycomb pattern of fatty...
Slide 12 Dermatofibroma

Fibroblastic Tumors: Case 5 DFSP with Fibrosarcoma

Slide 1 Case 5
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 Long fascicles
Slide 6 *Picture*
Slide 7 Case 5: Dermatofibrosarcoma Protuberans...
Slide 8 Case 5 Suggested Diagnoses
Slide 9 DFSP with fibrosarcomatous...
Slide 10 Dedifferentiation towards MFH...
Slide 11 DFSP with fibrosarcomatous...

Vascular Tumors: Case 7 AV Malformation

Slide 1 Vascular Tumors
Slide 2 Case 7
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 7: Arteriovenous Malformation
Slide 8 Case 7 Suggested Diagnoses
Slide 9 Vascular Tumors
Slide 10 Hemangiomas
Slide 11 *Picture*
Slide 12 A-V malformation

Slide 13 Arteriovenous malformation
Slide 14 Angiomatosis
Slide 15 Lymphangioma
Slide 16 Perivascular Proliferations
Slide 17 *Picture*
Slide 18 Perivascular Proliferations
Slide 19 Hemangiopericytoma
Slide 20 Vascular tumors – Intermediate
Slide 21 Myxoid matrix
Slide 22 Epithelioid hemangioendothelioma
Slide 23 Vascular tumors – Intermediate
Slide 24 Spindle cell hemangioendothelioma
Slide 25 Vascular Tumors: Malignant
Slide 26 Vascular Tumors – Benign vs. Malignant
Slide 27 Vascular Tumors – Venign vs. Malignant
Slide 28 Vascular tumor associations
Slide 29 Vascular tumor associations

Vascular Tumors: Case 8 Angiosarcoma

Slide 1 Case 8
Slide 2 *Picture*
Slide 3 Hemorrhagic
Slide 4 *Picture*
Slide 5 Case 8: Angiosarcoma
Slide 6 Case 8 Suggested Diagnoses
Slide 7 Angiosarcoma
Slide 8 Angiosarcoma Phenotypes
Slide 9 Angiosarcoma
Slide 10 Deep Soft Tissue
Slide 11 Angiosarcoma
Slide 12 Stewart-Treves Syndrome
Slide 13 Dabska Tumor
Slide 14 “Two of six patients had mets”

Vascular Tumors: Case 10 Malignant Hemangiopericytoma (HPC)

Slide 1 Case 10
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 10: Malignant Hamangiopericytoma
Slide 8 Case 10 Suggested Diagnoses
Slide 9 Hemangiopericytoma
Slide 10 Hemangiopericytoma
Slide 11 Soft Tissue Tumors of Exclusion
Slide 12 Hemangiopericytoma: Rules for Diagnosis

Neural Tumors: Case 13 Granular Cell Tumor

Slide 1 Neural Tumors
Slide 2 Case 13
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*

Slide 6 *Picture*
Slide 7 Case 13: Granular Cell Tumor
Slide 8 Case 13 Suggested Diagnoses
Slide 9 Granular Cell Tumor
Slide 10 Granular Cell Tumor
Slide 11 Granular Cell Tumor
Slide 12 Granular Cell Tumor: Generalities
Slide 13 Malignant Granular Cell Tumor

Neural Tumors: Case 14: Malignant Peripheral Nerve Sheath Tumor

Slide 1 Case 14
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 Case 14: Malignant Peripheral Nerve Sheath Tumor (MPNST)...
Slide 6 Case 14 Suggested Diagnoses
Slide 7 Mlg Schwannoma
Slide 8 Malignant Schwannoma Phenotypes
Slide 9 Stout's criteria
Slide 10 Mlg Schwannoma Non-Stoutian criteria
Slide 11 Non-Stoutian criteria
Slide 12 Mlg Schwannoma – Heterologous...
Slide 13 Mlg Schwannoma – Heterologous...
Slide 14 Neural tumors with muscle differentiation
Slide 15 MPNST
Slide 16 Malignant Peripheral Nerve Sheath Tumor

Muscle Tumors: Case 15: Myxoid Leiomyosarcoma

Slide 1 Muscle Tumors
Slide 2 Case 15
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 15: Myxoid Leiomyosarcoma
Slide 8 Case 15 Suggested Diagnoses
Slide 9 Myxoid Leiomyosarcoma
Slide 10 Myxoid
Slide 11 Leiomyosarcoma...Natural History
Slide 12 Smooth Muscle Tumors
Slide 13 Smooth muscle tumors
Slide 14 Leiomyosarcoma...mitotic figures...
Slide 15 Leiomyosarcoma
Slide 16 Tumors with appreciable glycogen
Slide 17 Leiomyosarcomas: Skin and...
Slide 18 Leiomyosarcomas: Retroperitoneal...
Slide 19 Leiomyosarcomas: Vascular

Muscle Tumors: Case 17: Rhabdomyosarcoma

Slide 1 Case 17
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*

Slide 6 Case 17: Rhabdomyosarcoma
Slide 7 Case 17 Suggested Diagnoses
Slide 8 Rhabdomyosarcoma ... default sarcoma in the young
Slide 9 Embryonal, Alveolar, Pleomorphic
Slide 10 Rhabdomyosarcoma
Slide 11 Rhabdomyosarcoma...Biphasic growth patterns
Slide 12 RMS cells
Slide 13 Myotubules
Slide 14 Cross striations
Slide 15 Cross striations...not necessary for diagnosis
Slide 16 Rhabdomyosarcoma – Botyroid
Slide 17 Rhabdomyosarcoma...Spindled
Slide 18 Rhabdomyosarcoma...Alveolar
Slide 19 Forearm mass in 15 y/o boy...
Slide 20 Rhabdomyosarcoma...Pleomorphic
Slide 21 Rhabdomyosarcoma – Traditional classification
Slide 22 Rhabdomyosarcoma, New Intergroup...
Slide 23 Rhabdomyosarcoma...New NCI...
Slide 24 Tumors of Skeletal Muscle
Slide 25 Rhabdomyosarcoma...Four main varieties
Slide 26 Fetal type
Slide 27 Genital type
Slide 28 Cardiac type

Fatty Tumors: Case 18: Spindle Cell Lipoma

Slide 1 Fatty Tumors
Slide 2 Case 18
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 18: Spindle Cell Lipoma
Slide 8 Case 18 Suggested Diagnoses
Slide 9 Spindle Cell Lipoma
Slide 10 Three main components
Slide 11 “Sometimes confused with...”
Slide 12 Rare...signet ring lipoblasts...
Slide 13 Pleomorphic lipoma
Slide 14 Related to...Solitary fibrous tumor?

Fatty Tumors: Case 19: Liposarcoma

Slide 1 Case 19
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 *Picture*
Slide 7 Case 19: Liposarcoma
Slide 8 Case 19
Slide 9 Liposarcoma...Traditional subtypes
Slide 10 Dedifferentiated liposarcomas
Slide 11 Lipoblasts
Slide 12 Signet ring
Slide 13 Liposarcoma – Myxoid

Slide 14 Liposarcoma – Myxoid
Slide 15 Myxoid Liposarcoma vs. Myxoid MFH
Slide 16 Liposarcoma – Round Cell
Slide 17 “Degenerative cysts are common...”
Slide 18 Myxoid and Round Cell Liposarcomas

Fatty Tumors: Case 20: Dedifferentiated Liposarcoma

Slide 1 Case 20
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 Case 20: Dedifferentiated Liposarcoma
Slide 7 Case 20 Suggested Diagnoses
Slide 8 Dedifferentiated Liposarcoma
Slide 9 Dedifferentiated Liposarcoma
Slide 10 “CD34 is commonly found...”
Slide 11 Pleomorphic sarcomas
Slide 12 Well differentiated Liposarcoma
Slide 13 WDLS
Slide 14 WDLS
Slide 15 Atypical lipoma vs. Well differentiated
Slide 16 Superficial or deep soft tissues...

Fatty Tumors: Case 21: Pleomorphic Liposarcoma

Slide 1 Case 21
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*
Slide 6 Case 21: Pleomorphic Liposarcoma
Slide 7 Case 21 Suggested Diagnoses
Slide 8 Pleomorphic liposarcoma
Slide 9 MFH...subtypes
Slide 10 Malignant Fibrous Histiocytoma
Slide 11 MFH – Subtypes
Slide 12 MFH – Subtypes
Slide 13 MFH – Subtypes
Slide 14 Atypical Fibroxanthoma
Slide 15 Atypical Fibroxanthoma
Slide 16 MFH: Prognostic indicators
Slide 17 “MFH as a phenotype...”
Slide 18 Tumors assuming the MFH phenotype
Slide 19 Tumor #1, Tumor #2
Slide 20 Ancient Schwannoma, Osteosarcoma
Slide 21 Tumor #3, Tumor #4
Slide 22 Anaplastic Thyroid Carcinoma, Pleomorphic Liposarcoma

Miscellaneous Soft Tissue Tumors: Case 6: Intramuscular Myxoma

Slide 1 Miscellaneous Soft Tissue Tumors
Slide 2 Case 6
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 *Picture*

Slide 6 *Picture*
Slide 7 Case 6: Intramuscular Myxoma
Slide 8 Case 6 Suggested Diagnoses
Slide 9 Intramuscular Myxoma
Slide 10 Hypovascular & Hypocellular
Slide 11 Aggressive angiomyxoma
Slide 12 Aggressive angiomyxoma
Slide 13 Intramuscular myxoma
Slide 14 Nerve sheath myxoma
Slide 15 Ganglion cyst
Slide 16 Juxtaarticular myxoma
Slide 17 Cardiac myxomas
Slide 18 Cardiac myxoma

Miscellaneous Soft Tissue Tumors: Case 9: Mesenchymal Chondrosarcoma

Slide 1 Case 9
Slide 2 *Picture*
Slide 3 “Highly cellular tumor growing...”
Slide 4 “Undifferentiated, small round...”
Slide 5 HPC-like growth pattern
Slide 6 Case 9: Mesenchymal Chondrosarcoma
Slide 7 Case 9 Suggested Diagnoses
Slide 8 Mesenchymal Chondrosarcoma
Slide 9 Islands of cartilage
Slide 10 Small round cell tumors
Slide 11 Small round cell tumors
Slide 12 HPC growth patterns
Slide 13 HPC growth patterns

Miscellaneous Soft Tissue Tumors: Case 11: Clear Cell Sarcoma

Slide 1 Case 11
Slide 2 Tumor nests separated by collagen
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 Case 11: Clear Cell Sarcoma
Slide 6 Case 11 Suggested Diagnoses
Slide 7 Clear cell sarcoma
Slide 8 Malignant Melanoma of Soft Parts
Slide 9 “Glycogen in most tumors”
Slide 10 Aggressive tumor
Slide 11 “Sarcomas tending toward...”
Slide 12 Lymph node metastasis

Miscellaneous Soft Tissue Tumors: Case 12: Alveolar Soft Part Sarcoma

Slide 1 Case 12
Slide 2 *Picture*
Slide 3 *Picture*
Slide 4 *Picture*
Slide 5 “Alveoli...”
Slide 6 *Picture*
Slide 7 Case 12: Alveolar Soft Part Sarcoma
Slide 8 Case 12 Suggested Diagnoses
Slide 9 Alveolar Soft Part Sarcoma
Slide 10 Alveolar Soft Part Sarcoma

Miscellaneous Soft Tissue Tumors: Case 16: Sarcoma

Slide 1 Case 16

Slide 2 *Picture*

Slide 3 *Picture*

Slide 4 *Picture*

Slide 5 *Picture*

Slide 6 Immunostains give a clue

Slide 7 “An Absence of...Helps to Exclude...”

Slide 8 “Various abdominal tumors...”

Slide 9 Intraabdominal Desmoplastic Small...

Slide 10 :Occasional “cording” significant...”

Slide 11 Case 16: Sarcoma

Slide 12 Case 16 Suggested Diagnoses

Slide 13 *Picture*