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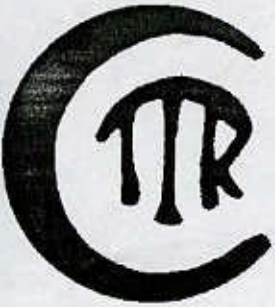

CALIFORNIA
TUMOR TISSUE REGISTRY

STUDY CASES

SEPTEMBER 1997

"GASTROINTESTINAL TUMORS"

California Tumor Tissue Registry
c/o: Department of Pathology and Human Anatomy
Loma Linda University School of Medicine
11021 Campus Avenue, AH 335
Loma Linda, California 92350
(909) 824-4788
FAX: (909) 478-4188

Target audience:

Practicing pathologists and pathology residents.

Goal:

To acquaint the participant with the histologic features of a variety of benign and malignant neoplasms and tumor-like conditions.

Objective:

The participant will be able to recognize morphologic features of a variety of benign and malignant neoplasms and tumor-like conditions and relate those processes to pertinent references in the medical literature.

Educational methods and media:

Review of representative glass slides with associated histories.
Feedback on consensus diagnoses from participating pathologists.
Listing of selected references from the medical literature.

Principal faculty:

Weldon K. Bullock, MD
Donald R. Chase, MD

CME Credit:

The CTTR designates this activity for up to 2 hours of continuing medical education. Participants must return their diagnoses to the CTTR as documentation of participation in this activity.

Accreditation:

The California Tumor Tissue Registry is accredited by the California Medical Association as a provider of continuing medical education.

CONTRIBUTOR: Douglas Kahn, M.D.
Canoga Park, CA

CASE NO. 1 - SEPTEMBER 1997

TISSUE FROM: Omentum

ACCESSION #27080

CLINICAL ABSTRACT:

This 70-year-old Caucasian male presented with a large abdominal mass at the time of routine examination. CT scan revealed this mass to be originating in the area of the stomach (although apparently not attached to it), extending anteriorly, compressing liver, stomach and pancreas. Past history included an emergency surgery three years earlier for an ulcerated gastric leiomyoma which had caused massive upper GI bleeding.

GROSS PATHOLOGY:

The 2384 gram specimen consisted of a 20.0 x 15.0 x 11.0 cm mass with a gray-tan, firm cut surface with multiple foci of hemorrhage, necrosis and yellow softened regions.

SPECIAL STAINS:

Desmin negative

CONTRIBUTOR: Marthe E. Smith, M.D.
San Francisco, CA

CASE NO. 2 - SEPTEMBER 1997

TISSUE FROM: Stomach

ACCESSION #22740

CLINICAL ABSTRACT:

This 28-year-old Hispanic male had noted progressive abdominal swelling for two years. He was otherwise entirely asymptomatic. Upper GI series showed an extrinsic mass compressing the stomach. Echograms and CT scans showed a large cystic mass in the upper abdomen, displacing the liver to the right. A Casoni skin test for Echinococus was strongly positive. The patient had lived on a farm in Mexico at the age of three. A large cystic mass was removed. It was located in the gastro-hepatic omentum with a small area of attachment to the lesser curvature of the stomach.

GROSS PATHOLOGY:

The 26 cm diameter cystic mass contained 2000 ml of xanthochromic fluid and weighed 960 grams after evacuation of the fluid. The cyst wall was 1.5 to 2.8 cm thick with a shaggy, irregular, hemorrhagic lining.

SPECIAL STAINS:

Desmin negative
S-100 negative

CONTRIBUTOR: Nelson J. Quigley, M.D.
Anaheim, CA

CASE NO. 3 - SEPTEMBER 1997

TISSUE FROM: Stomach

ACCESSION #28095

CLINICAL ABSTRACT:

This 79-year-old Caucasian female presented with a two day history of acute atrial fibrillations which converted back to sinus with digoxin therapy. While in the hospital she complained of epigastric discomfort, and following discharge, returned with persistent nausea and vomiting and continued epigastric discomfort. Physical examination revealed a firm mass palpable in the epigastric area. A partial gasterectomy and cholecystectomy was performed.

GROSS PATHOLOGY:

The portion of stomach was 7.5 x 6.5 x 0.2 cm overlying a 5.5 cm diameter nodule with central hemorrhage.

SPECIAL STAINS:

CD-34 positive

CONTRIBUTOR: Clifford N. Tschetter, M.D.
Hayward, CA

CASE NO. 4 - SEPTEMBER 1997

TISSUE FROM: Stomach

ACCESSION #21730

CLINICAL ABSTRACT:

This 59-year-old Caucasian male was admitted for a gnawing pain in the epigastrium with many loose tarry stools. He had a hemoglobin of 5.5 grams as well as symptoms of acute blood loss. No masses were palpable in the abdomen. A partial gastrectomy was performed. A multinodular mass was found extending from the stomach, pushing on the head of the pancreas and filled the lesser sac.

GROSS PATHOLOGY:

The subtotal resection of the stomach had an 11.0 diameter rubbery, apparently encapsulated mass distorting, but not ulcering the mucosa. A second, disk-shaped 19.0 x 16.0 x 7.0 cm pink-tan lobulated mass was also included.

SPECIAL STAINS:

Desmin positive

CONTRIBUTOR: Robert W. Purvis, M.D.
Modesto, CA

CASE NO. 5 - SEPTEMBER 1997

TISSUE FROM: Colon

ACCESSION #22903

CLINICAL ABSTRACT:

This 77-year-old female presented with several weeks of alternating diarrhea and constipation. She denied weight loss, melena, or passing bright red blood. Radiographs showed lesions in the ascending and proximal transverse colon suspicious for malignancy. A partial colectomy was done.

GROSS PATHOLOGY:

The ascending colon was quite thickened, tough and leathery for a distance of approximately 10 cm. Mucosa appeared intact but had a wrinkled cobblestone appearance. The mesocolon was thickened up to 5.0 cm with some areas firm. Lymph nodes were small and inconspicuous.

CONTRIBUTOR: E. DuBose Dent, M.D.
Glendale, CA

CASE NO. 6 - SEPTEMBER 1997

TISSUE FROM: Rectum

ACCESSION #23311

CLINICAL ABSTRACT:

This 65-year-old female had a ten day history of abrupt changes in her bowel habits with occasional drainage of blood from the rectum. Past history included a partial sigmoid colon resection for diverticulosis. A barium enema showed a tumor within the rectum. The patient underwent an abdominal perineal resection.

GROSS PATHOLOGY:

The 22 cm long specimen included anus, rectum and attached small portion of colon. At the dentate line was a 2.6 cm diameter area of submucosal firmness. A 3.7 cm firm, gray-white mass lay beneath the mucosa, extending into the underlying skeletal muscle.

CONTRIBUTOR: Fichard Folkes, M.D.
Fountain Valley, CA

CASE NO. 7 - SEPTEMBER 1997

TISSUE FROM: Colon

ACCESSION #21674

CLINICAL ABSTRACT:

This 50-year-old male had a two month history of abdominal pain with coffee ground emesis and reddish bowel movements positive for occult blood. Barium enema showed a large irregular filling defect in the right colon at about the ileocecal valve. A bowel resection was performed.

GROSS PATHOLOGY:

The specimen consisted of a 3.0 cm segment of terminal ileum and a 13.5 cm length of ascending colon. The colonic mucosa was granular gray-pink with a 6.5 x 6 x 2 cm raised plaque. In the mesocolon was an 8.0 x 4.4 x 3.5 cm red-gray nodule. The cut surfaces were mottled yellow and gray-white, fleshy and nodular. Eight additional lymph nodes showed partial or total replacement by gray-white granular tissue.

CONTRIBUTOR: Loma Linda Pathology Group (rlc)
Loma Linda, CA

CASE NO. 8 - SEPTEMBER 1997

TISSUE FROM: Gastroesophageal junction

ACCESSION #28183

CLINICAL ABSTRACT:

This 70-year-old male was found to have a perforated esophagus and underwent resection of the gastroesophageal junction.

GROSS PATHOLOGY:

The specimen consisted of a 59.8 gram, 10 x 6 x 3 cm section of distal esophagus and proximal stomach. Near the G-E junction was a 2.0 x 0.5 cm perforation without an obvious mucosal tumor but with an irregularly thickened wall. The mucosal surface surrounding the area of perforation was red-brown with adherent blood clot.

SPECIAL STAINS:

Chromogranin	negative
NSE	strongly positive
Synaptophysin	strongly positive

CONTRIBUTOR: Philip G. Robinson, M.D.
Boynton Beach, FL

CASE NO. 9 - SEPTEMBER 1997

TISSUE FROM: Colon

ACCESSION #28121

CLINICAL ABSTRACT:

This 29-year old Caucasian male presented with a four-day history of left lower quadrant abdominal pain and a one day history of nausea and vomiting and bloody diarrhea. An exploratory laparotomy and excisional biopsy of a colon lesion was performed.

GROSS PATHOLOGY:

The cylindrically-shaped specimen was 7.5 x 3.3 cm and had a yellow edematous cut surface.

SPECIAL STAINS:

HMB-45 negative

CONTRIBUTOR: John Sacoolidge, M.D.
Sylmar, CA

CASE NO. 10 - SEPTEMBER 1997

TISSUE FROM: Distal Stomach

ACCESSION #27912

CLINICAL ABSTRACT:

This 61-year old female presented with a two week history of lower abdominal pain radiating to the back. EGD showed a large submucosal mass of the gastric antrum with a friable surface suspicious for malignancy. CT scan showed antral wall thickening and an enlarged retroperitoneal lymph node.

GROSS PATHOLOGY:

The 11.0 x 6.0 x 4.0 cm unopened portion of distal stomach contained a 4.5 x 1.5 cm firm mass with a tan to yellow cut surface showing cystic spaces up to 0.5 cm in diameter.

SPECIAL STAINS:

PAS with diastase positive

CALIFORNIA
TUMOR TISSUE REGISTRY

MINUTES

FOR

SEPTEMBER 1997

"GASTROINTESTINAL TUMORS"

SUGGESTED READING (General Topics from Recent Literature):

Malignant Small Bowel Neoplasms. Histopathologic Determinants of Recurrence and Survival. Cunningham JD, Aleali R, Aleali M, Brower ST and Aufses AH. *Annals of Surgery* 1997; 225(3): 300-306.

A Mechanism by which *Helicobacter pylori* Infection of the Antrum Contributes to the Development of Duodenal Ulcer. Olbe L, Hamlet A, Dalenback J, and Fandriks L. *Gastroenterology* 1996; 110: 1386-1394.

Physiology and Pathophysiology of Dendritic Cells. Wright-Browne V, McClain KL, Talpaz M, Ordonez N, and Estrov Z. *Hum Pathol* 1997; 28(5): 563-579. Editorial. A Historical Perspective of Statistics

Commentary: Predicting Clinical Outcome for Uterine Smooth Muscle Neoplasms with a Reasonable Degree of Certainty. Longacre TA, Hendrickson, MR, Kempson RL. Clinicopathologic Uterine Leiomyosarcomas with Metastasis. *Int J Gynecol Pathol* 1995; 14: 243-249.

Gastrointestinal Lymphomas: On Overview with Emphasis on New Findings and Diagnostic Problems. *Semin Diagn Pathol* 1996; 13: 260-296. Chan JKC.

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E-mail: cttr@linkline.com

INLAND (Riverside/San Bernardino) - G.I.S.T., malignant (1); G.I.S.T, probably malignant (1); Leiomyosarcoma (malignant stromal tumor).
RIVERSIDE - Stromal tumor of high malignant potential.
LOS ANGELES (UCLA) - Gastrointestinal stromal tumor, malignant.
ORANGE - GIST, malignant (7).
LONG BEACH - Gastrointestinal stromal tumor, malignant (5).
LOS ALAMITOS - G.I.S.T., malignant.
OAKLAND (Bay Area) - Gastrointestinal stromal tumor (probably malignant and ? smooth muscle origin (3).
SAN DIEGO (Naval Medical Ctr) - Malignant GI stromal tumor (10); GI stromal tumor of uncertain malignant potential (3).
VENTURA - Gastric sarcoma (1); Gastrointestinal stromal tumor (spindle cell sarcoma type) (1).
SANTA ROSA - Leiomyosarcoma (1); Mesenchymal neoplasm, malignant c/w leiomyosarcoma (1); G.I.S.T, malignant (1).
SANTA BARBARA (Cottage Hospital) - G.I.S.T. malignant.
OAKLAND (Kaiser) - Malignant GI stromal tumor.
BAKERSFIELD (Central Valley) - Spindle cell tumor probably fibrosarcoma.
PLEASANTON/FREMONT - Malignant gastrointestinal stromal tumor (6).
NEVADA, Reno - Gastrointestinal stromal sarcoma (2).
WYOMING - Malignant gastrointestinal stromal tumor (G.I.S.T.).
CHICAGO (Grant Hospital) - Gastric stromal tumor, malignant.
NEBRASKA (Creighton University) - GI stromal tumor, malignant.
LOUISIANA, Shreveport - Leiomyosarcoma.
MARYLAND (Bethesda Naval Medical Center) - G.I.S.T., malignant.
NEW JERSEY (Summit) - Leiomyosarcoma (4).
NEW YORK, NY (Impath) - Malignant gastrointestinal stromal tumor.
NEW YORK, Northport - Malignant gastrointestinal stromal tumor.
MASSACHUSETTS, Pittsfield - Gastrointestinal stromal sarcoma.
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Gastric stromal tumor (epithelioid leiomyoma).
FLORIDA (Tallahassee) - Leiomyosarcoma, malignant G.I.S.T. (4).

DIAGNOSIS:

MALIGNANT GASTROINTESTINAL STROMAL SARCOMA, STOMACH
T63000, M89303

REFERENCES:

Franquemont DW. Differentiation and Risk Assessment of Gastrointestinal Tumors. *Am J Clin Pathol* 1995; 103: 41-47.
Appleman HD. Smooth Muscle Tumors of the Gastrointestinal Tract. What We know Now That Stout Didn't Know. *Am J Surg Pathol* 1986; 10(Suppl 1): 83-99.
McGrath PC, Niefeld JP, Lawrence W, et al. Gastro-Intestinal Sarcomas. Analysis of Prognostic Factors. *Ann Surg* 1987; 206: 706-710.
Ma CK, Amin MB, Kintanar E, Linden MD, et al. Immunohistologic Characterization of Gastrointestinal Stromal Tumors. A Study of 82 Cases Compared with 11 Cases of Leiomyomas. *Mod Pathol* 1993 (6): 139-144.
Monihan JM, Carr NJ, Sobin LH. CD 34 Immunoexpression in Stromal Tumours of the Gastrointestinal Tract and in Mesenteric Fibromatoses. *Histopathol* 1994 (25): 469-473

INLAND (Riverside/San Bernardino) - Neurilemmoma (1); Cyst, echinococcal by history (1); Inflammatory pseudotumor vs benign cystic stromal tumor (1).
RIVERSIDE - Low grade cystic mesothelioma of peritoneum.
LOS ANGELES (UCLA) - Echinococcal cyst.
ORANGE - GIST of uncertain malignant potential (7).
LONG BEACH - Parasitic cyst consistent with echinococcus (5).
LOS ALAMITOS - Parasitic cyst suggestive of echinococcus.
OAKLAND (Bay Area) - Schwannoma (3).
SAN DIEGO (Naval Medical Ctr) - Degenerative cyst consistent with echinococcal infection (5); Benign stromal tumor (3); Both of the above (2).
VENTURA - Benign gastric stromal tumor with cystic degeneration (1); Benign gastrointestinal stromal tumor (1).
SANTA ROSA - G.I.S.T.(1); Probable echinococcus (hydatid) cyst with reactive fibroplasia in wall. No definitive organisms nor eggs found (1); G.I.S.T. uncertain malignant potential (1).
SANTA BARBARA (Cottage Hospital) - Ancient schwannoma with cystic degeneration.
OAKLAND (Kaiser) - Alveolar hydatid cyst.
BAKERSFIELD (Central Valley) - Spindle cell tumor (fibroblastic).
PLEASANTON/FREMONT - GI stromal tumor, probably of neural origin (4); (?) echinococcal cyst (2).
NEVADA, Reno - Gastrointestinal stromal tumor of uncertain malignant potential with prominent degenerative features (2).
WYOMING - G.I.S.T., uncertain malignant potential.
CHICAGO (Grant Hospital) - Gastric stromal tumor, benign with cystic degeneration.
NEBRASKA (Creighton University) - GI stromal tumor.
LOUISIANA, Shreveport - c/w echinococcus cyst (with "hydatid sand").
MARYLAND (Bethesda Naval Medical Center) - G.I.S.T., indeterminate.
NEW JERSEY (Summit) - GI stromal tumor, low malignant biological potential (2); Echinococcus cyst (2).
NEW YORK, NY (Impath) - Gastrointestinal stromal tumor (4).
NEW YORK, Northport - Echinococcal cyst.
MASSACHUSETTS, Pittsfield - G.I.S.T., type IV.
PENNSYLVANIA (Good Samaritan Red Med Ctr) - Echinococcal cyst.
FLORIDA (Tallahassee) - Malignant G.I.S.T.; G.I.S.T. of uncertain malignant potential. (4).

DIAGNOSIS:

GI STROMAL TUMOR OF INDETERMINATE CLINICAL BEHAVIOR, WITH CYSTIC DEGENERATION, STOMACH
T63000, M95600

Note: Although some slides showed the cystic areas to be suggestive of echinococcus, no definite organisms were identified. (drc)

CONSULTATION:

Raffaele Lattes, M.D., College of Physicians and Surgeons of Columbia University, New York, NY. "Smooth Muscle Tumor with Degenerative Changes of Indeterminate Clinical Behavior."

FOLLOW-UP: After one year, the patient was reportedly doing well and without recurrence.

REFERENCES:

Morgan BK, Compton C, Talbert M, et al. Benign Smooth Muscle Tumors of the Gastrointestinal Tract. A 24-Year Experience. *Ann Surg* 1990; 211: 63-66. (See Ref Case 1).
Newman PL, Wadden C, Fletcher CD. Gastrointestinal Stromal Tumors. Correlation of Immunotype with Clinico-Pathological Features. *J Pathol* 1991; 164: 107-117.
Macksay B, Roj Floyd C, Ordonez NG. Ultrastructual Observations on Smooth Muscle Tumors. *Ultrastruct Pathol* 1987; 11: 593-607.
Evans HL. Smooth Muscle Tumors of the Gastrointestinal Tract. A Study of 56 Cases Followed for a Minimum of 10 Years. *Cancer* 1985; 56: 2242-2250.

INLAND (Riverside/San Bernardino) - G.I.S.T., low grade (1); Gastrointestinal stromal tumor (1); Benign stromal tumor (1).
RIVERSIDE - Stromal tumor of low malignant potential.
LOS ANGELES (UCLA) - Gastrointestinal stromal tumor, borderline malignant potential.
ORANGE - GIST of uncertain malignant potential (7).
LONG BEACH - Gastrointestinal stromal tumor, low malignant potential (5).
LOS ALAMITOS - G.I.S.T., borderline.
OAKLAND (Bay Area) - Gastrointestinal stromal tumor (2); Epithelioid hemangioendothelioma (1).
SAN DIEGO (Naval Medical Ctr) - Benign stromal tumor (13).
VENTURA - Gastric stromal tumor of uncertain biologic potential (1); Gastrointestinal stromal tumor – uncertain biologic potential (1).
SANTA ROSA - G.I.S.T. uncommitted (1); Gastro-intestinal stromal tumor of uncertain malignant potential (1); Hemangiopericytoma vs G.I.S.T., uncommitted type (1).
SANTA BARBARA (Cottage Hospital) - G.I.S.T.
OAKLAND (Kaiser) - GI stromal tumor of uncertain malignant potential.
BAKERSFIELD (Central Valley) - Stromal tumor probably fibrous histiocytoma.
PLEASANTON/FREMONT - GI stromal tumor, NOS (5); (?) solitary fibrous tumor (1).
NEVADA, Reno - Gastrointestinal stromal tumor of uncertain malignant potential (2).
WYOMING - Benign G.I.S.T.
CHICAGO (Grant Hospital) - Epithelioid hemangioendothelioma.
NEBRASKA (Creighton University) - Solitary fibrous tumor.
LOUISIANA, Shreveport - Gastric stromal tumor (c/w leiomyosarcoma).
MARYLAND (Bethesda Naval Medical Center) - G.I.S.T., indeterminate.
NEW JERSEY (Summit) - G.I. stromal tumor, low malignant biological potential (4).
NEW YORK, NY (Impath) - Gastrointestinal stromal tumor (4).
NEW YORK, Northport - Solitary fibrous tumor.
MASSACHUSETTS, Pittsfield - G.I.S.T., type IV (probably).
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Malignant lymphoma with sclerosis.
FLORIDA (Tallahassee) - G.I.S.T. (4).

DIAGNOSIS:

GASTROINTESTINAL STROMAL TUMOR, STOMACH
T63000,M80001

FOLLOW-UP: No recurrence after 7 months.

REFERENCES:

Tomasulo J. Gastric Polyps. Histologic Types and their Relation to Gastric Carcinoma. *Cancer* 1971; 27: 1346-1355.

Bando T, Tsayama T, Toyoshima H. Submucosal Tumors of the Stomach. A Study of 100 Operative Cases. *Surg* 1993; 113(5): 498-506.

Lewin KJ, Appelman HD. Mesenchymal Tumors and Tumor-Like Proliferations. In Tumors of the Esophagus and Stomach. Atlas of Tumor Pathology 18, Third Series, Rosai J El. *Armed Forces Institute of Pathology*, Washington, D.C., 1996: 405-456.

Weiss SW, Nicoloff BJ. CD-34 is Expressed by a Distinctive Cell Population in Peripheral Nerve Sheath Tumors and related Lesions. *Am J Surg Pathol* 1993; 17: 1037-1045.

Louwers GY, Eraldson RA, Casper ES, et al. Gastrointestinal Autonomic Nerve Tumors. A Clinicopathological Immunohistochemical and Ultrastructural Study of 12 Cases. *Am J Surg Pathol* 1993; 887-897.

INLAND (Riverside/San Bernardino) - G.I.S.T. benign, smooth muscle epithelioid variant (1); Leiomyoma, probably malignant (1); Epithelioid smooth muscle stromal tumor of low malignant potential (1).

RIVERSIDE - Epithelioid leiomyoma/epithelioid cell stromal tumor.

LOS ANGELES (UCLA) - Gastrointestinal stromal tumor, malignant.

ORANGE - Leiomyoblastoma (4); Leiomyosarcoma (2); GIST, malignant (1).

LONG BEACH - Gastrointestinal stromal tumor, epithelioid, low malignant potential (5).

LOS ALAMITOS - G.I.S.T. epithelioid, borderline.

OAKLAND (Bay Area) - Epithelioid leiomyoma (3).

SAN DIEGO (Naval Medical Ctr) - Malignant GI stromal tumor (11); GI stromal tumor of uncertain malignant potential (2).

VENTURA - Gastric leiomyosarcoma (1); Gastrointestinal stromal tumor—malignant epithelioid type.

SANTA ROSA - G.I.S.T. epithelioid borderline by size (1); Gastrointestinal stromal tumor, epithelioid, borderline malignant potential (1); G.I.S.T. epithelioid variant, uncertain malignant potential (1).

SANTA BARBARA (Cottage Hospital) - Epithelial leiomyosarcoma (malignant G.I.S.T.)

OAKLAND (Kaiser) - GI stromal sarcoma—low grade epithelioid.

BAKERSFIELD (Central Valley) - Leiomyosarcoma.

PLEASANTON/FREMONT - Leiomyosarcoma (6).

NEVADA, Reno - Epithelioid cell gastrointestinal stromal tumor of uncertain malignant potential (2).

WYOMING - Epithelioid leiomyoblastoma.

CHICAGO (Grant Hospital) - Gastric stromal tumor, malignant.

NEBRASKA (Creighton University) - GI stromal tumor, epithelioid, borderline.

LOUISIANA, Shreveport - Epithelioid leiomyosarcoma.

MARYLAND (Bethesda Naval Medical Center) - G.I.S.T., malignant.

NEW JERSEY (Summit) - Epithelioid leiomyosarcoma, low grade.

NEW YORK, NY (Impath) - Epithelioid leiomyosarcoma, (malignant leiomyoblastoma) (4).

NEW YORK, Northport - Epithelioid leiomyoma.

MASSACHUSETTS, Pittsfield - G.I.S.T., type I (epithelioid type).

PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Gastric stromal tumor (leiomyosarcoma).

FLORIDA (Tallahassee) - Epithelioid leiomyosarcoma, malignant G.I.S.T. (4).

DIAGNOSIS:

LOW GRADE EPITHELIOID LEIOMYOSARCOMA, STOMACH
T63000, M88903

REFERENCES:

Blei E, Gonzalez-Crussi F. The Intriguing Nature of Gastric Tumors in Carney's Triad. *Cancer* 1992; 69: 292-300.

Byard RW, Barr JR, Naidoo SP, McCaughey WT. Cystic Stromal Tumors with Epithelioid Features. Clinico-Pathologic Features of 22 Cases. *Surg Pathol* 1990; 3: 281-288.

Cooper PN, Quirke P, Hardy GJ, Dixon MJ. A Flow Cytometric, Clinical and Histological Study of Stromal Neoplasms of the Gastrointestinal Tract. *Amer J Surg Pathol* 1992; 16(2): 163-170.

Farrugra G, Kin CH, Grant CS, Zinsmeister AR. Leiomyosarcoma of the Stomach. Determinants of Long Term Survival Mayo *Clin Proc* 1992; 533-536.

INLAND (Riverside/San Bernardino) - Adenocarcinoma, signet-ring type (1); Malignant fibrous histiocytoma (1); Signet ring carcinoma (1).
RIVERSIDE - Diffusely infiltrating (signet ring cell) carcinoma.
LOS ANGELES - Poorly differentiated/signet ring cell carcinoma.
ORANGE - Poorly differentiated neoplasm, metastatic versus primary (7).
LONG BEACH - Poorly differentiated mucinous adenocarcinoma (5).
LOS ALAMITOS - Poorly differentiated mucinous adenocarcinoma.
OAKLAND (Bay Area) - Adenocarcinoma (linitis plastica type) (3).
SAN DIEGO (Naval Medical Ctr) - Mucinous carcinoma (10); Malignant melanoma (1); Malignant neoplasm, NOS (1); Lymphoma (1).
VENTURA - Poorly differentiated carcinoma (2).
SANTA ROSA - Signet ring cell carcinoma (1); Carcinoma diffuse "signet ring" type (1); Signet ring cell carcinoma (1).
SANTA BARBARA (Cottage Hospital) - Signet ring carcinoma metastatic to colon.
OAKLAND (Kaiser) - Metastatic adenocarcinoma—signet ring cell.
BAKERSFIELD (Central Valley) - Poorly differentiated adenocarcinoma.
PLEASANTON/FREMONT - Diffuse adenocarcinoma, linitis plastica pattern (6).
NEVADA, Reno - Adenocarcinoma, diffuse signet-ring type (2).
WYOMING - Poorly differentiated (diffuse) adenocarcinoma.
CHICAGO (Grant Hospital) - Poorly differentiated, signet ring, adenocarcinoma (linitis plastica type).
NEBRASKA (Creighton University) - Poorly differentiated adenocarcinoma, diffuse type (primary vs met).
LOUISIANA, Shreveport - Carcinomatosis, mucinous and undifferentiated, (?) metastatic from breast.
MARYLAND (Bethesda Naval Medical Center) - Poorly differentiated neoplasm, favor carcinoma.
NEW JERSEY (Summit) - Adenocarcinoma, poorly-differentiated (3); (? Metastatic) (1).
NEW YORK, NY (Impath) - Metastatic adenocarcinoma—stomach is the most likely primary, however, breast cannot be excluded (4).
NEW YORK, Northport - Leiomyoblastoma.
MASSACHUSETTS, Pittsfield - Carcinoma (probably metastatic) (3); Lymphoma (2); G.I.S.T. (1).
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Signet ring cell adenocarcinoma.
FLORIDA (Tallahassee) - Signet ring cell adenocarcinoma (4).

DIAGNOSIS:

POORLY DIFFERENTIATED ADENOCARCINOMA OF COLON, SIGNET RING-TYPE ("LINITIS PLASTICA OF COLON")
T67000, M81423

CONSULTATION: David A. Wood, M.D., San Francisco, CA. "Carcinoma, Colon (Ascending and Transverse), Linitis Plastica Type."

REFERENCES:

Quizilbash H. Linitis Plastica Carcinoma of the Intestine. Report of Four Cases. *Dis Colon Rectum* 1974; 17(4):540-549.
Raskin M.M, Viamonte M., Miamonte M., Jr. Primary Linitis Plastica Carcinoma of Colon. *Radiology* 1974; 113(1):17-22.
Liu IOL, Kung IJM, Lee JMH, Boey JH. Primary Colorectal Signet-Ring Cell Carcinoma in Young Patients. Report of Three Cases. *Pathol 1985*: 31.
Ojeda VJ, Michell KM, Walters MN, Gibson MJ. Primary Rectal Limits Plastica Type Carcinoma. Report of Two Cases and Review of the Literature. *Pathol* 1982; 14: 181.

INLAND (Riverside/San Bernardino) - Anal canal carcinoma (squamous carcinoma) (1); Squamous cell carcinoma, anus (1); Squamous cell carcinoma of anal canal (1).
RIVERSIDE - Squamous cell carcinoma of anus.
LOS ANGELES (UCLA) - Squamous cell carcinoma (cloacogenic).
ORANGE - Carcinoma of anal canal, basaloid type (4); Squamous cell carcinoma (2).
LONG BEACH - Squamous cell carcinoma (5).
LOS ALAMITOS - Squamous cell carcinoma.
OAKLAND (Bay Area) - Anorectal squamous cell carcinoma (2); Cloacogenic carcinoma (1).
SAN DIEGO (Naval Medical Ctr) - Squamous cell carcinoma (13).
VENTURA - Squamous cell carcinoma (2).
SANTA ROSA - Squamous cell carcinoma (cloacogenic) (3).
SANTA BARBARA (Cottage Hospital) - Ketatinizing squamous cell carcinoma of anal tumor.
OAKLAND (Kaiser) - Basaloid squamous cell carcinoma.
BAKERSFIELD (Central Valley) - Anal squamous cell carcinoma (basaloid).
PLEASANTON/FREMONT - Squamous cell carcinoma (6).
NEVADA, Reno - Squamous cell carcinoma (2).
WYOMING - Moderately differentiated squamous cell carcinoma, anus.
CHICAGO (Grant Hospital) - Anorectal cloacogenic carcinoma.
NEBRASKA (Creighton University) - Squamous cell carcinoma (ATZ carcinoma).
LOUISIANA, (Shreveport) - Squamous cell carcinoma (cloacogenic).
MARYLAND (Bethesda Naval Medical Center) - Squamous cell carcinoma, basaloid-type.
NEW JERSEY (Summit) - Squamous cell carcinoma (3); Cloacogenic carcinoma (1).
NEW YORK, NY (Impath) - Invasive squamous cell carcinoma (4).
NEW YORK, Northport - Squamous cell carcinoma (anal canal carcinoma).
MASSACHUSETTS, Pittsfield - Basaloid carcinoma (cloacogenic carcinoma).
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Cloacogenic carcinoma.
FLORIDA (Tallahassee) - Cloacogenic carcinoma; squamous cell carcinoma (4).

DIAGNOSIS:

SQUAMOUS CELL CARCINOMA ("CLOACOGENIC CARCINOMA"), RECTUM
T68000, M81243

REFERENCES:

Fenger C, Nielsen VT. Precancerous Changes in the Anal Canal Epithelium in Resection Specimens. *Acta Pathol Microbiol Immunol Scand* (A) 1986; 94: 63-69.

Shepard NA, Scholefield JH, Love SB, et al. Prognostic Factors in Anal Squamous Carcinoma. A Multivariant Analysis of Clinical, Pathological and Flow Cytometric Parameters in 235 Cases. *Histopathology* 1990; 16: 545-555.

Craxson T, Chabon B, Rorat E, et al. Intra-Epithelial Carcinoma of the Anus in Homosexual Men. *Dis Colon Rectum* 1984; 27: 325-330.

Noffsinger A, Witte D, Fenoglio CM. The Relationship of Human Papillomavirus to Proliferation and Ploidy in *Carcinoma of the Anus* 1995; 75: 958-967.

Unger ER, Vernon SD, Lee DR, Miller DL, et al. Human Papillomavirus Type in Anal Epithelial Lesions Influenced by Human Immunodeficiency Virus. *Arch Pathol Lab Med* 1997; 121: 820-824.

INLAND (Riverside/San Bernardino) - Malignant lymphoma, small lymph, high grade (Burkitt's-like) (1); Malignant lymphoma, diffuse, large cell type (1); Diffuse large cell lymphoma (1).
RIVERSIDE - Diffuse undifferentiated cell lymphoma.
LOS ANGELES (UCLA) - Malignant lymphoma, high grade, favor Burkitt's-like.
ORANGE - Malignant lymphoma, small non-cleaved cells (6).
LONG BEACH - Non-Hodgkin's lymphoma, large cell type (5).
LOS ALAMITOS - Lymphoma, large cells, intermediate.
OAKLAND (Bay Area) - Diffuse large cell lymphoma (2); (r/o small cell undifferentiated carcinoma) (1).
SAN DIEGO (Naval Medical Ctr) - Malignant lymphoma, small non-cleaved (high grade) (13).
VENTURA - Malignant lymphoma, poorly differentiated lymphocytic, diffuse (1); Poorly differentiated lymphocytic lymphoma—diffuse type.
SANTA ROSA - Diffuse large cell lymphoma (2); malignant lymphoma, undifferentiated, Burkitt's type (1).
SANTA BARBARA (Cottage Hospital) - Diffuse large cell lymphoma.
OAKLAND (Kaiser) - Large cell lymphoma (Non-Hodgkin's).
BAKERSFIELD (Central Valley) - Non-Hodgkin's lymphoma (diffuse large cell).
PLEASANTON/FREMONT - Malignant lymphoma, high grade, small non-cleaved (3); ML, high grade, large cell, nos (2); ML, high grade, large cleaved (1).
NEVADA, Reno - Large cell lymphoma (2).
WYOMING - Malignant lymphoma, small non-cleaved cell, Burkitt's-type.
CHICAGO (Grant Hospital) - Malignant lymphoma, diffuse large cell type.
NEBRASKA (Creighton University) - Lymphoma, diffuse, large cell (r/o high grade MALT).
LOUISIANA, Shreveport - Malignant lymphoma, large cell type.
MARYLAND (Bethesda Naval Medical Center) - Malignant lymphoma, diffuse large cell.
NEW JERSEY (Summit) - Large cell lymphoma (4).
NEW YORK, NY (Impath) - Malignant lymphoma, diffuse, large cell (4).
NEW YORK, Northport - Burkitt's lymphoma.
MASSACHUSETTS, Pittsfield - Lymphoma, diffuse large cell type.
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Malignant lymphoma, Non-Hodgkin's, B-cell, intermediate grade.
FLORIDA (Tallahassee) - Large cell lymphoma, high grade lymphoma (4).

DIAGNOSIS:

DIFFUSE LARGE CELL LYMPHOMA, ASCENDING COLON
M67200, M95903

REFERENCES:

Isaacson PG. Recent Developments in our Understanding of Gastric Lymphoma. *Am J Surg Pathol* 1996; (Suppl 1) 20: S1-S7.
Chan JKC, Banks PM, Cleary ML, et al. A Revised European-American Classification of Lymphoid Neoplasms Proposed by the International Lymphoma Study Group. A Summary Version. *Am J Clin Pathol* 1995; 103: 543-560.
Rosenberg SA. Classification of Lymphoid Neoplasms. *Blood* 1994; 84: 1359-1360.
Dehner LP. Here We Go Again. New Classification of Malignant Lymphomas. A Viewpoint from the Trenches. *Am J Clin Pathol* 1995; 103: 539-540.

INLAND (Riverside/San Bernardino) - Malignant carcinoid (2); Moderately differentiated neuroendocrine carcinoma (1).
RIVERSIDE - Carcinoid of GE junction area.
LOS ANGELES (UCLA) - Malignant neuroendocrine carcinoma.
ORANGE - Carcinoid (6).
LONG BEACH - Carcinoid (5).
LOS ALAMITOS - Carcinoid.
OAKLAND (Bay Area) - Carcinoid and adenocarcinoma (? Adenocarcinoid) (3).
SAN DIEGO (Naval Medical Ctr) - Gastric carcinoid tumor (13).
VENTURA - Carcinoid tumor (2).
SANTA ROSA - Carcinoid (3).
SANTA BARBARA (Cottage Hospital) - Carcinoid tumor.
OAKLAND (Kaiser) - Carcinoma with neuroendocrine features.
BAKERSFIELD (Central Valley) - Carcinoid tumor.
PLEASANTON/FREMONT - Carcinoid (6).
NEVADA, Reno - Carcinoid tumor (2).
WYOMING - Gastric carcinoid.
CHICAGO (Grant Hospital) - Gastric neuroendocrine tumor (gastric carcinoid).
NEBRASKA (Creighton University) - Carcinoid, atypical carcinoid.
LOUISIANA, Shreveport - Neuroendocrine carcinoma, grade 2.
MARYLAND (Bethesda Naval Medical Center - Carcinoid.
NEW JERSEY (Summit) - Carcinoid (4).
NEW YORK, NY (Impath) - Carcinoid tumor (4).
NEW YORK, Northport - Neuroendocrine carcinoma.
MASSACHUSETTS, Pittsfield - Neuroendocrine tumor.
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Carcinoid tumor.
FLORIDA (Tallahassee) - Carcinoid (4).

DIAGNOSIS:

COMPOSITE CARCINOID TUMOR—ADENOCARCINOMA, GASTROESOPHAGEAL JUNCTION.
T62910, M82443

Note: Most of the slides showed only the neuroendocrine component. (drc)

REFERENCES:

Ulich RR, Kollin M, Lewin KL. Composite Gastric Carcinoma. Report of a Tumor of the Carcinoma-Carcinoid Spectrum. *Arch Pathol Lab Med* 1988; 112: 91-93.

Mills SE. Neuroendocrine Tumors of the Head and Neck. A Selected Review with Emphasis on Terminology *Endocrine Pathology* 1996; 7(4): 329-343.

Morishita Y, Tanaka T, Kato K, et al. Gastric Collision Tumor (Carcinoid and Adenocarcinoma) with Gastritis Cystica Profunda. *Arch Pathol Lab Med* 1991; 115: 1006-1010.

Krishnamurthy S, Doyal Y. Immunohistochemistry Transforming Growth Factor. Alpha and Epidermal Growth Factor Receptor in Gastrointestinal Carcinoids. *Am J Surg Pathol* 1997; 21 (3): 327-333.

INLAND (Riverside/San Bernardino) - Kaposi's sarcoma (2); Ulcerated lipoma with reactive cellular atypia
RIVERSIDE - Atypical lipoma.
LOS ANGELES (UCLA) - Severe ischemic bowel.
ORANGE - Non-neoplastic inflammatory and reactive changes (6).
LONG BEACH - Low-grade liposarcoma (5).
LOS ALAMITOS - Well-differentiated liposarcoma.
OAKLAND (Bay Area) - Low grade liposarcoma (2); Atypical angiomyxolipoma (1).
SAN DIEGO (Naval Medical Ctr) - Lipoma (13).
VENTURA - Lipoma (2).
SANTA ROSA - Kaposi's sarcoma (3).
SANTA BARBARA (Cottage Hospital) - Inflammatory pseudotumor of mesentery.
OAKLAND (Kaiser) - Lipoma.
BAKERSFIELD (Central Valley) - Lipoma.
PLEASANTON/FREMONT - Atypical lipoma (well-differentiated low-grade liposarcoma (6).
NEVADA, Reno - Lipoma with degenerative features (2).
WYOMING - Fibrosing mesenteritis.
CHICAGO (Grant Hospital) - Angiolipoma.
NEBRASKA (Creighton University) - Lipoma, angiolipoma.
LOUISIANA, Shreveport - Favor liposarcoma (over lipoma, atypical).
MARYLAND (Bethesda Naval Medical Center) - Submucosal lipoma.
NEW JERSEY (Summit) - N.E.C. (1); Ischemic bowel with ? – unusual vascular mesenteric disease (3).
NEW YORK, NY (Impath) - Ischemic colitis.
NEW YORK, Northport - Kaposi's sarcoma.
MASSACHUSETTS, Pittsfield - Necrotic bowel and inflammatory reaction.
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Submucosal lipoma, spindle cell type.
FLORIDA (Tallahassee) - Lipoma (4).

DIAGNOSIS:

ATYPICAL SUBMUCOSAL LIPOMA, COLON
T67000, M88500

REFERENCES:

Rosai J, Ackerman M, Cin PD, Dewever I, Mandahl N, et al. Combined Morphologic and Karyotypic Study of 59 Atypical Lipomatous Tumors. Evaluation of their Relationship and Differential Diagnosis with Other Adipose Tumors. *Am J Surg Pathol* 1996; 20(10): 1182-1189.

Buelow PC, Buck JL, Carr NJ, et al. Intussuscepted Colonic Lipomas. Loss of Fat Attenuation on CT with Correlation in 10 Cases. *Abdom Imaging* (United States) 1996; 21(2): 153-156.

Michowitz M, Lazebnik N, Noy A, et al. Lipoma of the Colon. A Report of 22 Cases 1985; *Am Surg* 51: 449-454.

Snover DC. Atypical Lipomas of the Colon. Report of Two Cases with Pseudomalignant Features. *Dis Colon Rectum* 1984; 27; 485.

Ferandez M, Davis RP, Nora PF. Gastrointestinal Lipomas. *Arch Surg* 1983; 118: 1081.

Rosai J, Akerman M, Dal Cin P, Dewever, et al. Combined Morphologic and Karyotypic Study of 59 Atypical Lipomatous Tumors. Evaluation of Their Relationship and Differential Diagnosis with Other Adipose Tissue Tumors. (A Report of the CHAMP Study Group.) *Am J Surg Pathol* 1996; 20(10): 1182-1189.

INLAND (Riverside/San Bernardino) - Adenocarcinoma, well-differentiated, poorly-differentiated with signet-ring cells (1); Adenocarcinoma, poorly differentiated (1); Poorly differentiated (diffuse) adenocarcinoma (1).
RIVERSIDE - Adenocarcinoma of stomach.
LOS ANGELES (UCLA) - Adenocarcinoma.
ORANGE - Poorly differentiated adenocarcinoma arising in chronic gastritis with dysplasia.
LONG BEACH - Poorly differentiated mucinous adenocarcinoma (5).
LOS ALAMITOS - Adenocarcinoma, poorly differentiated.
OAKLAND (Bay Area) - Adenocarcinoma, probable mucinous "signet-ring" gastric type (3).
SAN DIEGO (Naval Medical Ctr) - Poorly differentiated adenocarcinoma (13).
VENTURA - Moderately differentiated adenocarcinoma (2).
SANTA ROSA - Adenocarcinoma 1 degree vs 2 degree (1); Adenocarcinoma (1); Adenocarcinoma, primary with metastasis (1).
SANTA BARBARA (Cottage Hospital) - Poorly differentiated adenocarcinoma of stomach.
OAKLAND (Kaiser) - Adenocarcinoma, poorly differentiated.
BAKERSFIELD (Central Valley) - Adenocarcinoma.
PLEASANTON/FREMONT - Adenocarcinoma, probably metastatic (6).
NEVADA, Reno - Poorly differentiated adenocarcinoma, tubular-type (2).
WYOMING - Poorly differentiated gastric adenocarcinoma.
CHICAGO (Grant Hospital) - Moderate to poorly differentiated adenocarcinoma.
NEBRASKA (Creighton University) - Gastric adenocarcinoma
LOUISIANA, Shreveport - Poorly differentiated adenocarcinoma (grade 3-4).
MARYLAND (Bethesda Naval Medical Center) - Moderately to poorly differentiated adenocarcinoma
NEW JERSEY (Summit) - Adenocarcinoma (poorly-differentiated) (3); moderately differentiated (1).
NEW YORK, NY (Impath) - Invasive adenocarcinoma of stomach.
NEW YORK, Northport - Adenocarcinoma.
MASSACHUSETTS, Pittsfield - Adenocarcinoma (could primary or met).
PENNSYLVANIA (Good Samaritan Reg Med Ctr) - Adenocarcinoma, mixed papillary—solid pattern.
FLORIDA (Tallahassee) - Adenocarcinoma (4).

DIAGNOSIS:

ADENOCARCINOMA, DISTAL STOMACH
T63000, M81403

REFERENCES:

Lewin KJ, Appelman HD. Atlas of Tumor Pathology. Tumors Third Series, Fascicle 18. Tumors of the Esophagus and Stomach. *Armed Forces Institute of Pathology,* Washington, DC 1996.

Haraguchi M, Okarmura T, Korenaga D, et al. Heterogeneity of DNA Ploidy in Patients with Undifferentiated Carcinomas of the Stomach. *Cancer* 1987; 59: 922-924.

Hirohashi S, Sugimura T. Genetic Alterations in Human Gastric Cancer. *Cancer Cells* 1991; 3: 49-52.

Blaser MJ, Perez-Perez CI, Kleauhous H, et al. Infection with *Heliobacter pylori* Strains Possessing Cag A is Associated with Increased Risk of Developing Adenocarcinoma of the Stomach. *Cancer Research* 1995; 55: 2111-2115.

Gulley ML, Pulitzer DR, Eagan PA, Schneider RG. Epstein-Barr Virus Infection is an Early Event in Gastric Carcinogenesis and is Independent of bcl-2 Expression and p53 Accumulation. *Hum Pathol* 1996; 27: 20-27.