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M1 Patients and Populations:

DISTURBANCES OF GROWTH
NEOPLASIA I

Gerald D. Abrams MD

Fall 2008
ORGANS/TISSUES SMALLER THAN NORMAL

- DEVELOPMENTAL
  AGENESIS
  APLASIA
  HYPOPLASIA
  ATRESIA

- ACQUIRED
  ATROPHY
UNILATERAL RENAL AGENESIS
UNILATERAL RENAL HYPOPLASIA
LIVER, “BROWN ATROPHY”
ORGANS / TISSUES LARGER THAN NORMAL

- HYPERTROPHY
  INCREASE IN CELL SIZE

- HYPERPLASIA
  INCREASE IN CELL NUMBER
HEART, NORMAL
HEART, HYPERTROPHY
MYOCARDIUM, NORMAL

G.D. Abrams, University of Michigan Medical School
MYOCARDIUM, HYPERTROPHY
SKIN, HYPERPLASIA
SKIN, HYPERKERATOSIS
MAMMARY GLAND

G.D. Abrams, University of Michigan Medical School
MAMMARY GLAND, LACTATING

G.D. Abrams, University of Michigan Medical School
PROSTATE, HYPERPLASIA
BREAST- FIBROCYSTIC CHANGE
NORMAL BREAST
BREAST FIBROCYSTIC CHANGE
ABNORMAL PATTERNS OF CELL GROWTH / DIFFERENTIATION

• METAPLASIA

• DYSPLASIA
ENOCERVIX, SQUAMOUS METAPLASIA
ENDOCERVIX, SQUAMOUS METAPLASIA
SQUAMOUS EPITHELIUM, NORMAL
SQUAMOUS EPITHELIUM, MODERATE DYSPLASIA
SQUAMOUS EPITHELIUM, SEVERE DYSPLASIA
NEOPLASM / “TUMOR”

- MASS (“NEW GROWTH”) – PROLIFERATING CELLS
- AUTONOMOUS
- NON-EQUILIBRIUM, UNCOORDINATED GROWTH
- PERSISTENT / IRREVERSIBLE
NEOPLASTIC TRANSFORMATION

- SERIES OF GENETIC EVENTS
- CLONAL CHARACTERISTICS
Benign Tumor: growth by expansion

Malignant Tumor: growth by invasion
BENIGN AND MALIGNANT GROWTH

• BENIGN
  COHESIVE / EXPANSILE
  CIRCUMSCRIBED / LOCALIZED

• MALIGNANT
  POORLY CIRCUMSCRIBED / INVASIVE….METASTASIZING
UTERUS, LEIOMYOMA
UTERUS, LEIOMYOMA
BREAST CANCER
COLON CANCER
CANCER INVADING COLONIC WALL
METASTASIS

• A COMPLEX CASCADE OF EVENTS
• VIA BLOOD
• VIA LYMPH
• DIRECT
CANCER CELLS WITHIN BLOOD VESSEL
CANCER CELLS WITHIN LYMPHATIC
PERITONEUM, CARCINOMATOSIS
PERITONEAL METASTASES
LIVER, METASTASES
EYE, PRIMARY MALIGNANT MELANOMA
LUNG, METASTASES
VERTEBRAE, METASTASES
VERTEBRA, METASTASIS
LIVER, METASTASES
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