PATHOLOGY

○ Sheet ✓ Slide ○ Handout

Number

11

Subject

male genital tract-pathology

Doctor

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Date: **00/00/2016**

Price:

Testicular Neoplasms

- In the 15- to 34-year-old age group, they are the most common tumors of men.
- include:

I. **Germ cell tumors** : *(95%); all are malignant.*

II. **Sex cord-stromal tumors**: from Sertoli or Leydig cells; usually benign.

Risk factors:

1. whites > blacks.

2. Cryptorchidism

3- to-5 folds risk of cancer in undescended testis, and an increased risk of cancer in the contralateral descended testis.

3. Intersex syndromes

-Androgen insensitivity syndrome; Gonadal dysgenesis

4. Family history Brothers of males with germ cell tumors have an 8-10-fold increased risk over that of the population

5. cancer in one testis markedly increased risk of neoplasia in the contralateral testis.

6. isochromosome of the short arm of chromosome 12, i(12p), found in all germ cell tumors, regardless of histologic type.

7. Most testicular tumors in postpubertal males arise from the in situ lesion ***intratubular germ cell neoplasia;*** present in conditions associated with a high risk of developing germ cell tumors (e.g., cryptorchidism, dysgenetic gonads

Testicular germ cell tumors are subclassified into:

I. **Seminomas**

II. **Non-seminomatous germ cell tumors(NSGCT)**

- The histologic appearances may be:

1. Pure (single histologic type; 60%)
2. Mixed (40%).

I. Seminomas,

- 30-40% of all testicular tumors (most common)
- 40 yr +
- rare in prepubertal children
- progressive painless enlargement of the testis
- histologically identical to ovarian dysgerminomas and to germinomas occurring in the CNS and other extragonadal sites.

MORPHOLOGY

Gross

- soft, well-demarcated tumors
- usually without hemorrhage.

2. Embryonal carcinomas :

- ill-defined, invasive masses containing foci of hemorrhage and necrosis

Microscopically

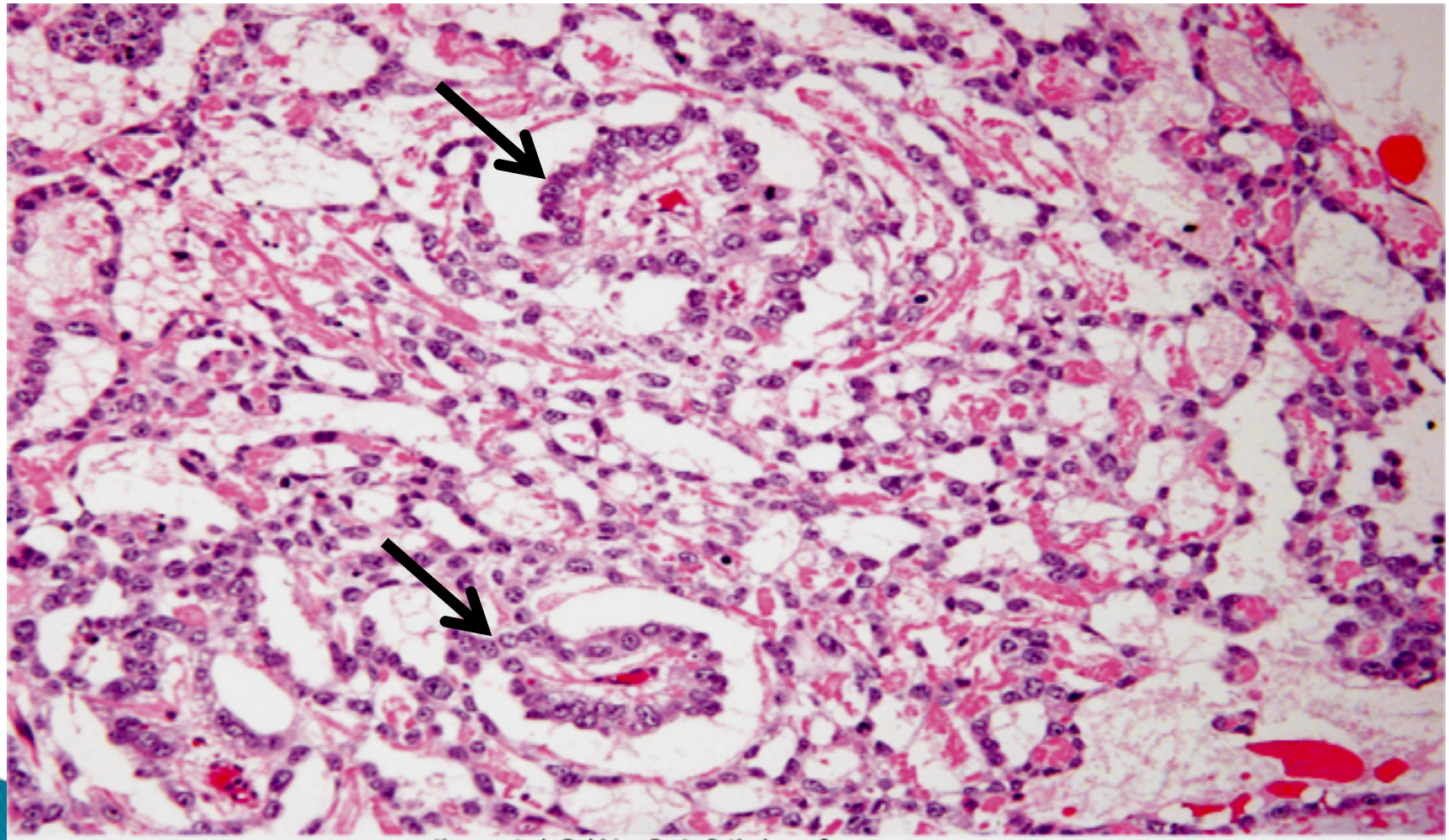
The tumor cells are large and primitive-looking. The cytoplasm is basophilic.

3. Yolk sac tumors

- the most common primary testicular neoplasm in **children** younger than 3 yr.
- composed of cells forming Microcysts, Lacelike (reticular) patterns.
- A distinctive feature is the presence of structures called Schiller-Duvall bodies.
- AFP elevated in serum.

Yolk sac tumor

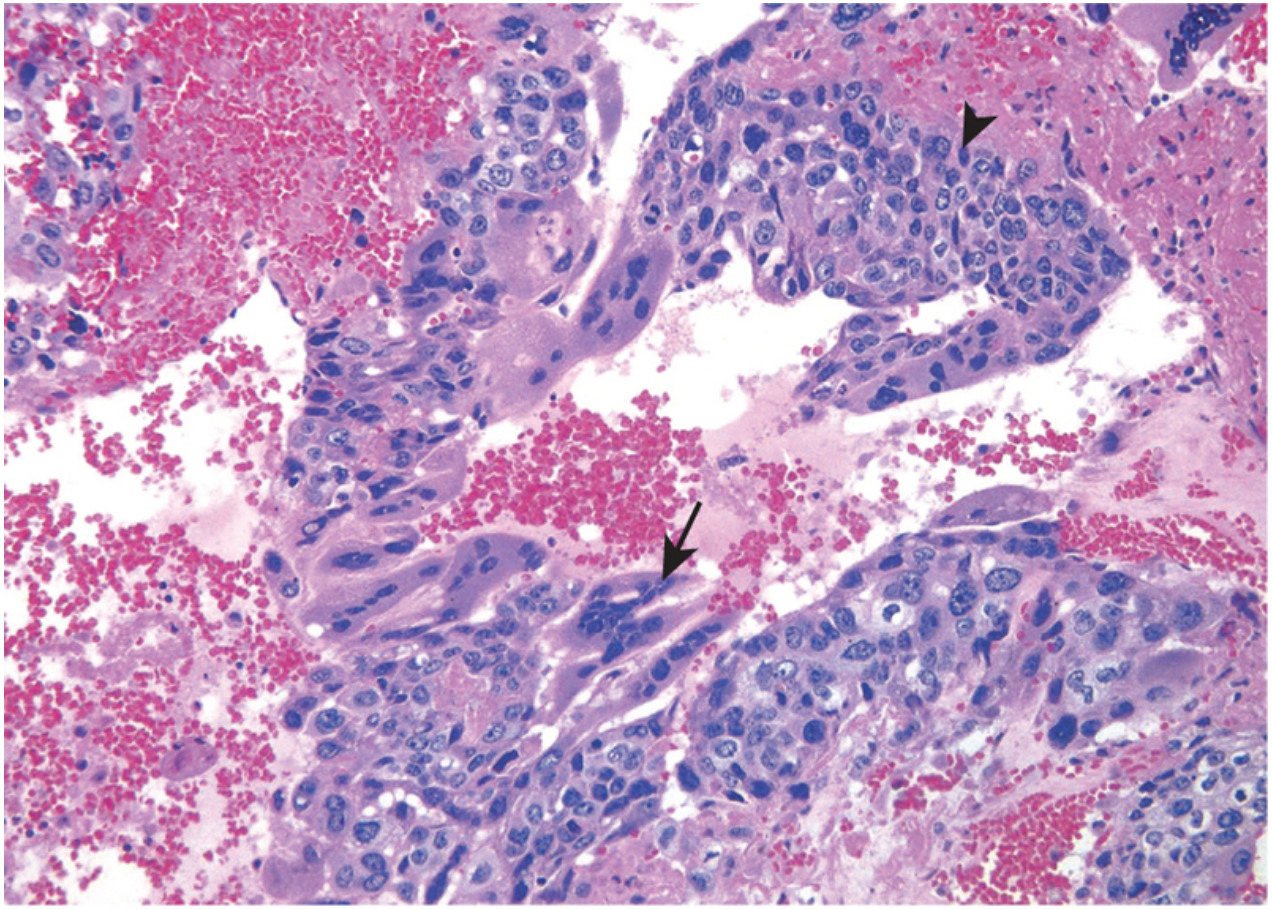
black arrows: Schiller-Duvall bodies.



4. Choriocarcinomas

- trophoblastic cells.
- 5%
- may be small lesions, even those with extensive systemic metastases
- Microscopic examination
- composed of sheets of (**cytotrophoblasts**) irregularly intermingled with large multinucleated cells (**syncytiotrophoblasts**).
- **HCG** is elevated in serum

Choriocarcinoma: arrows represents syncytiotrophoblasts



5. Teratomas

- Looks like teratoma of ovary
- Pure forms of teratoma are common in infants and children , being second in frequency only to yolk sac tumors
- In adults, teratomas are usually mixed with other types
- May be mature or immature

Prognosis:

- **In prepubertal males**, teratomas are typically **benign**
- whereas teratomas in postpubertal males are **malignant**, being capable of metastasis

regardless of whether they are composed of mature or immature elements

Clinical Features of all testicular germ cell neoplasms

1- produce a ***painless*** *testicular mass*.

2- **Biopsy** is associated with risk of tumor spillage (**contraindicated**), so best to do excision of the scrotal skin in addition to orchiectomy.

3 - Seminomas and nonseminomatous tumors differ in their behavior and clinical course:

I. Seminomas

-better prognosis

II. Nonseminomatous germ cell neoplasms

- Worse prognosis (metastasize earlier, by lymphatic and hematogenous routes (most common to liver and lungs).

Assay of *tumor markers* secreted by germ cell

a. These markers are helpful diagnostically and in follow up (response of tumors to therapy):

I. Human chorionic gonadotropin (hCG)

- elevated in choriocarcinoma.

2. Increased alpha fetoprotein (AFP)

- indicates a yolk sac tumor.

3. lactate dehydrogenase (LDH)

not secreted by germ cells, but correlate with the tumor burden in the body and magnitude of metastasis.

treatment of testicular germ cell neoplasms

I. **Seminoma**: **radiosensitive** ; best prognosis (95% of early-stage disease can be cured)

II. **nonseminomatous** tumors: **aggressive chemotherapy**

- Good rates of complete remission.

-Pure **choriocarcinoma** carries a dismal prognosis.

Prostate gland pathology

Benign Prostatic Hyperplasia (Nodular Hyperplasia)

- extremely common by 40; frequency rises with age.
- *androgen-dependent* proliferation of both stromal and epithelial elements, with enlargement of gland and, in some cases, urinary obstruction.
- does not occur in males castrated before puberty

symptoms

- only 10% of cases
- ***lower urinary tract obstruction:***
  (hesitancy; urgency, frequency, and nocturia).
- - ↑ risk of urinary tract infections.

Carcinoma of the Prostate

- older than 50 years of age.
- **most common form of cancer in men**
- significant drop in mortality, due to increased detection of the disease through screening test

- PATHOGENESIS

1. Androgens.

- does not develop in males castrated before puberty.
- Cancers regress in response to surgical or chemical castration

2. Heredity –

- ↑risk among first-degree relatives of patients with prostate cancer.

3. Environment

- Geographical variations
- **diet**

4. Acquired somatic mutations

- androgen-regulated promoter of the ***TMPRSS2*** gene and the coding sequence of ETS family transcription factors (the most common being ERG).
- - ***TMPRSS2-ETS*** fusion genes occur in 40% to 50% of prostate cancers

Clinical Features

- *80% in peripheral glands* → palpable on digital rectal examination.
- elevated serum prostate-specific antigen (**PSA**) level **screening** tests.
- Bone metastases (axial skeleton) → **osteoblastic** (bone-producing) lesions on *bone scans*