

Case Based Urology Learning Program

Resident's Corner: *UROLOGY*

Case Number 22

Case Based Urology Learning Program

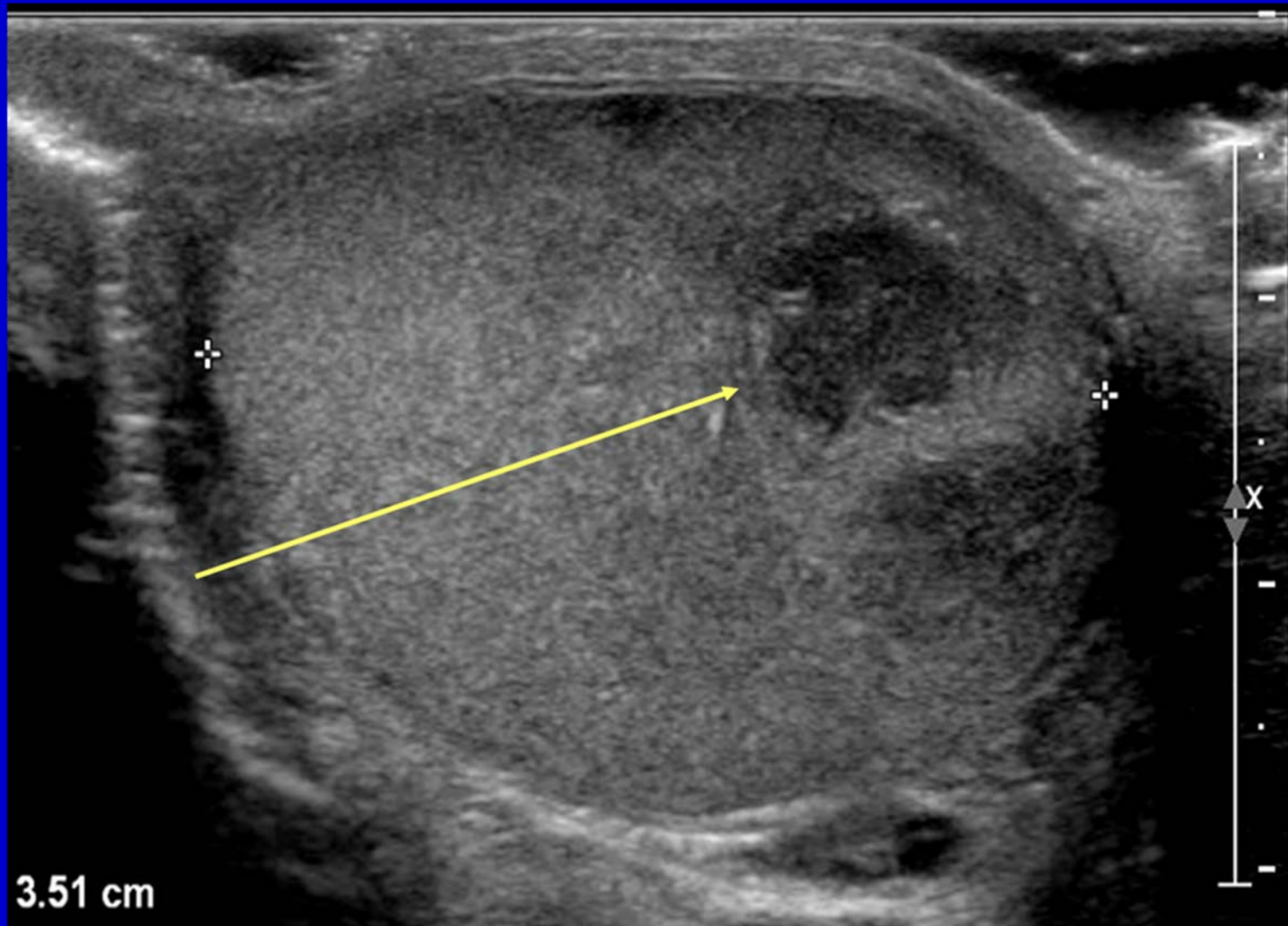
Editor: Steven C. Campbell, MD PhD
Cleveland Clinic

Associate Editors: Jonathan H. Ross, MD
Rainbow Babies & Children's Hospital, UH
David A. Goldfarb, MD
Cleveland Clinic
Howard B. Goldman, MD
Cleveland Clinic

Manager: Nikki Williams
Cleveland Clinic

Case Contributors: Steven C. Campbell, MD PhD
Cleveland Clinic

A 37-year-old man presents with a palpable mass in the R testis. An US is obtained with a representative image shown.



What are the important findings on
testicular US?

What are the important findings on testicular US?

The ultrasound shows a hypoechoic mass in the R testis. A hypoechoic pattern is commonly seen with testis tumors. The mass appears to be confined to the testis.

What is the differential diagnosis for a testicular mass like this?

What is the differential diagnosis for a testicular mass like this?

Germ Cell Tumor of the Testis: seminoma or nonseminomatous germ cell tumor, which represent the great majority of tumors in the testis (90-95%)

Sex Cord and Stromal Tumors: Leydig cell tumors (1-3%) or Sertoli cell tumors (< 1%)

Mixed Germ Cell and Stromal Tumors: Gonadoblastoma (0.5%), seen in dysgenetic gonads

Other tumors: spermatocytic seminoma, lymphoma, metastasis from other cancers

CAH that is inadequately treated leading to proliferation of adrenal rests: usually bilateral

Sarcoid and other inflammatory disorders

Collagen vascular diseases

Infectious: abscess, TB, etc.

Trauma/hematoma

What are predisposing factors for testis cancer?

What are predisposing factors for testis cancer?

Undescended testis

Testicular atrophy

Infertility

CIS of the testis

Previous contralateral testis cancer

This patient has no predisposing factors for testis cancer.

What further evaluation is necessary?

What further evaluation is necessary?

Tumor markers: AFP, HCG, and LDH

CXR

Tumor markers and CXR were both normal.

What is the most likely diagnosis?

What is the most likely diagnosis?

The most likely diagnosis is seminoma. Seminoma is the most common testis tumor in this age group; and most patients with non-seminomatous germ cell tumors will have elevation of at least one tumor marker. Most patients with seminoma have normal tumor markers, though serum HCG is elevated in 10% of cases.

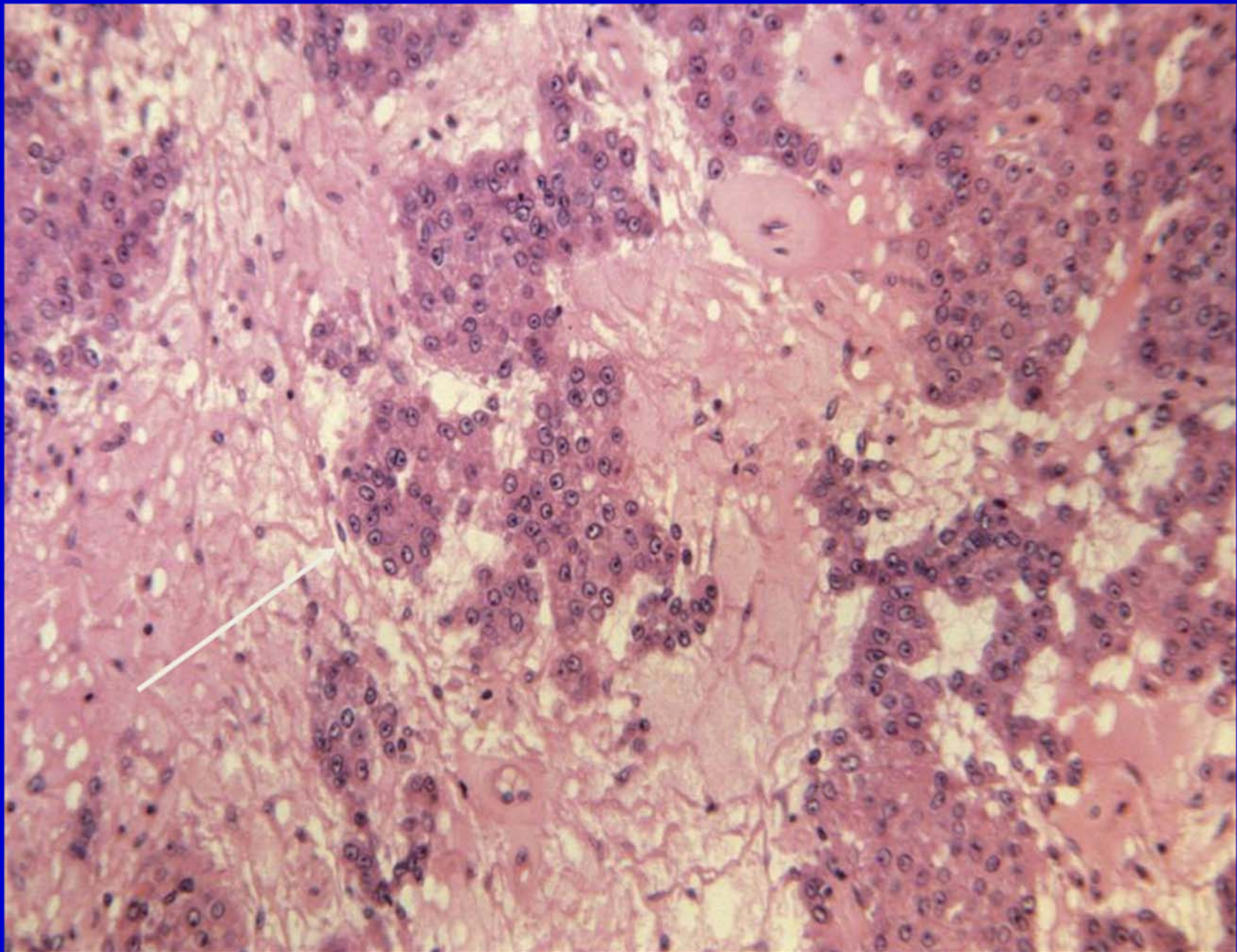
What is the next step in management?

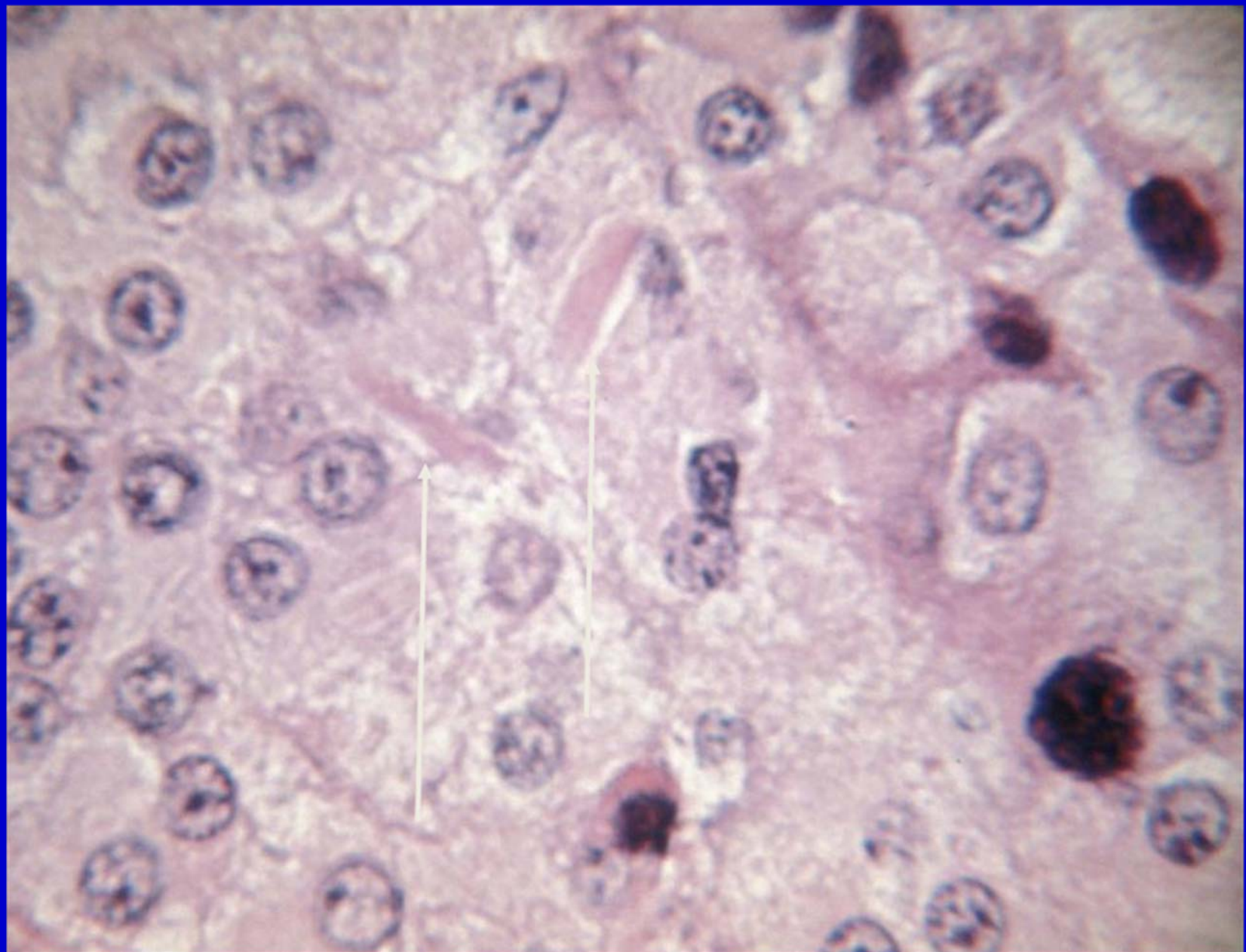
What is the next step in management?

A right inguinal orchiectomy should be performed with high ligation of the cord.

A right inguinal orchiectomy is performed and representative pathology is shown.







What is the pathologic diagnosis?

What is the pathologic diagnosis?

Gross histology shows a fleshy, well circumscribed tumor consistent with a sex cord/stromal tumor.

The next slide shows clusters of Leydig cells

The final slide shows a Reinke crystal that is characteristic of a Leydig cell tumor. This is a cigar shaped crystal in the cytoplasm of the cells.

Final diagnosis: Leydig cell tumor

Most Leydig cell tumors are seen in adults but about 25% are found prior to puberty

Testosterone levels should be checked and might be helpful for surveillance

What percentage of Leydig cell tumors are malignant and how are they diagnosed?

What percentage of Leydig cell tumors are malignant and how are they diagnosed?

10% of Leydig cell tumors are malignant, and these can be very aggressive

Malignancy for this tumor type, similar to most endocrine tumors, is difficult to differentiate histologically, and requires demonstration of metastasis or locally invasive phenotype to establish the diagnosis.

A CT of the abdomen and pelvis should be obtained to assess the retroperitoneal lymph nodes.

It is interesting to note that malignancy is not seen in prepubertal boys with Leydig cell tumors, only in adults.

What is the typical presentation for a patient with a Leydig cell tumor? What is the most dramatic presentation for patients with this tumor type?

What is the typical presentation for a patient with a Leydig cell tumor? What is the most dramatic presentation for patients with this tumor type?

The typical presentation of a Leydig cell tumor in adults is incidental or with gynecomastia due to the high testosterone levels.

The most dramatic presentation of a Leydig cell tumor is precocious puberty in a young boy with prominent development of the external genitalia, mature masculine voice, and pubic hair growth.

Selected Reading

Campbell/Walsh Urology, 9th Edition, Chapter 29,
Neoplasms of the Testis. Richie JP and Steele GS,
pages 925-935, 2007.

Topic:

Oncology: Testis Tumors

Subtopics:

Leydig Cell Tumors