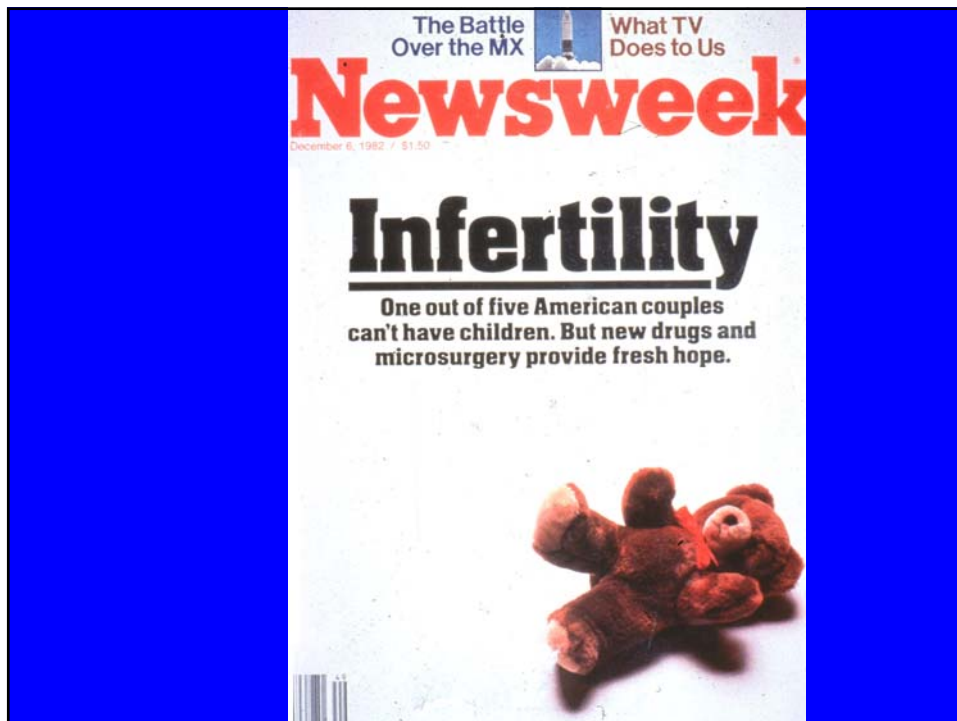


The Do's and Don'ts of Male Infertility

Jon L. Pryor, M.D.
Professor and Chair
Department of Urologic Surgery
University of Minnesota



History

1. General information and reproductive history
2. Childhood and developmental history
3. Past medical history: surgical, medical, medications
4. Gonadotoxins:
 - a. Smoking
 - b. Alcohol
 - c. Drugs
 - d. Radiation exposure
 - e. Chemotherapy
 - f. Temperature Extremes

History (continued)

5. Sexual history
6. Family history
7. Female evaluation
8. Review of symptoms:
 - a. fevers, colds
 - b. sinus infections
 - c. anosmia
 - d. peripheral field or visual problems
 - e. breast pain or secretion
 - f. scrotal pain

Physical Examination of the Subfertile Male

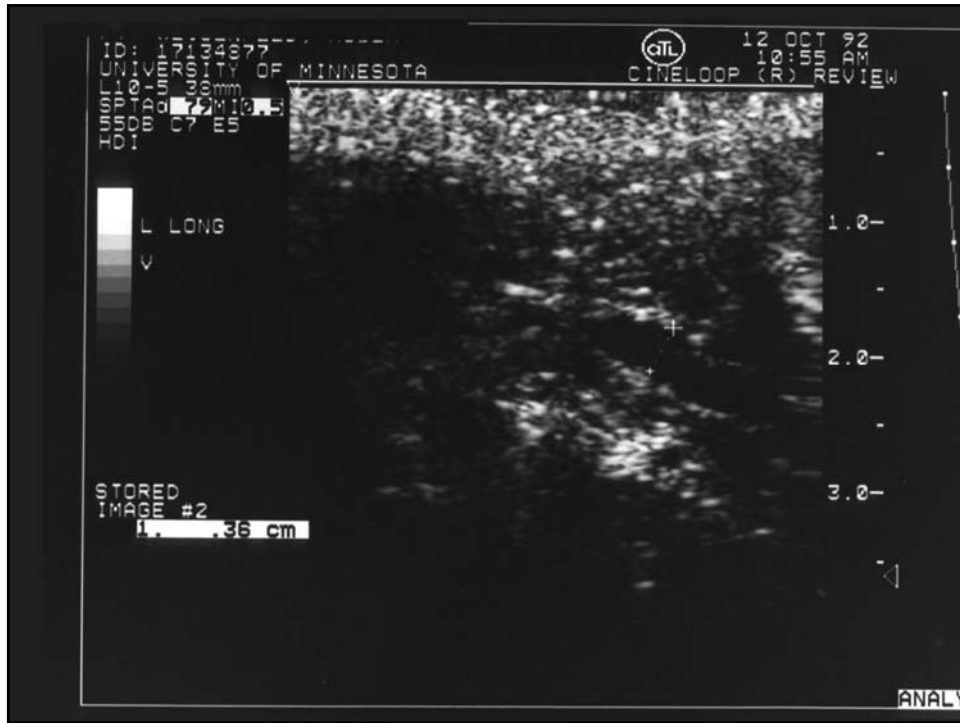
1. General
 - a. Secondary sexual characteristics
 - b. Body habitus
 - c. Any system suggested by the history
2. Genitourinary
 - a. Penis
 - b. Scrotal
 - I. Presence of vas deferens
 - II. Presence of a varicocele
 - III. Epididymis
 - IV. Testis
 - size (4 cm in length or 20 ml in vol.)
 - consistency
 - c. Prostate



Criteria for Diagnosing a Varicocele

<u>Reference</u>	<u>Criteria</u>
Wolverson et al, 1983	numerous veins >2 mm
Hamm et al, 1986	a vein > 2 mm with dilation
Orda et al, 1987	a vein > 2.5 mm that dilates with valsalva
McClure et al, 1991	> 3 veins and > 3 mm





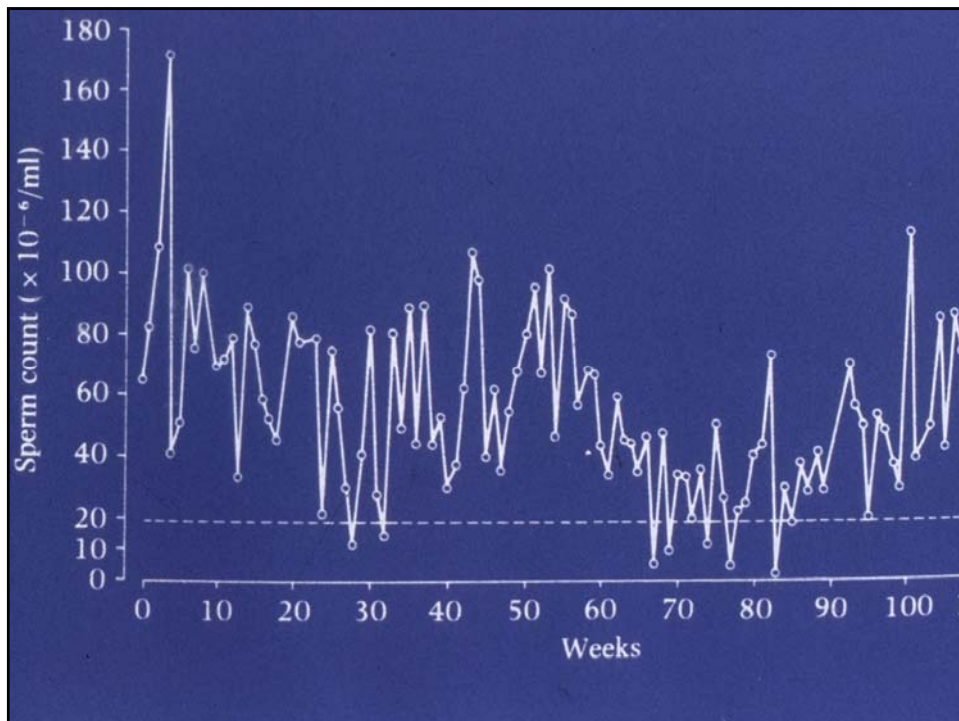
U.S. Evaluation of Spermatic Cords in the Normal Fertile Male Pryor et al

Subjects: 26 fertile men screened by P.E. and S.A.
6 with varicoceles on exam excluded.
Remaining 20 underwent scrotal U.S.

Results: 14/20 (70%) had a varicocele
using > 3mm vein diameter as criteria

Do

- rely on your examination for diagnosing a varicocele.



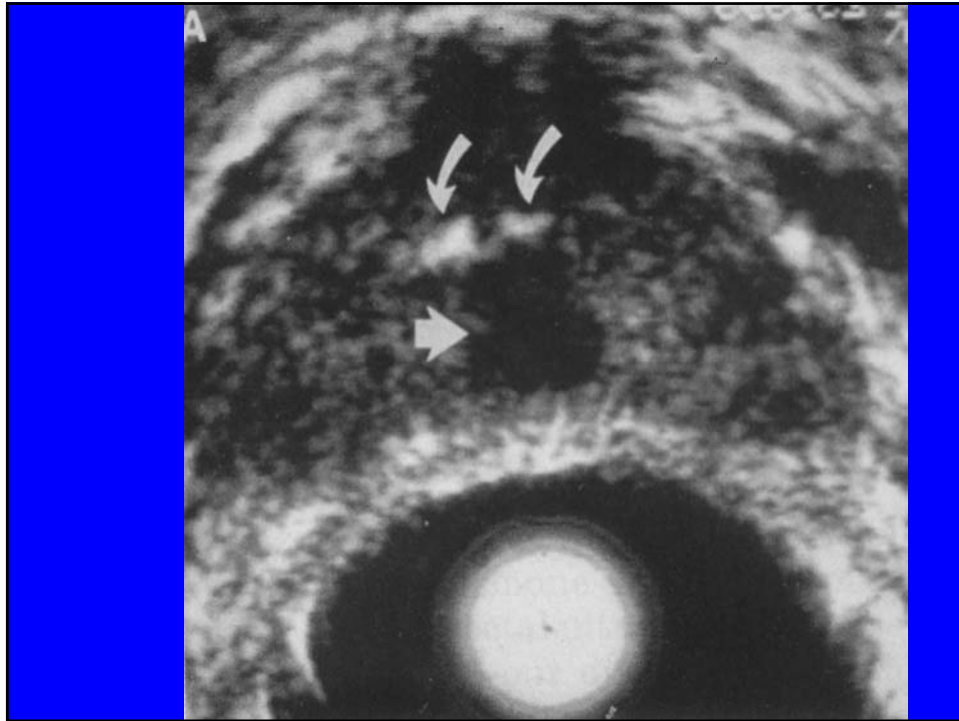
Do

- history
- physical examination
- two semen analyses

TRUS: Müllerian Duct Cyst (Patterson and Jarow, 1990)

Hx: 30 year old male with “dry ejaculation”
presented with testicular and perineal
pain.

SA: Volume - 0.4 ml
Count - < 1 million sperm



TRUS: Müllerian Duct Cyst (Patterson and Jarow, 1990)

Dx: Müllerian Duct Cyst

Tx: Transurethral Unroofing of Cyst

Results: Ejaculation Volume Increased
to 3.5 ml with Normal Semen
Parameters

(Hellerstein, Meacham, and Lipshultz, 1992)

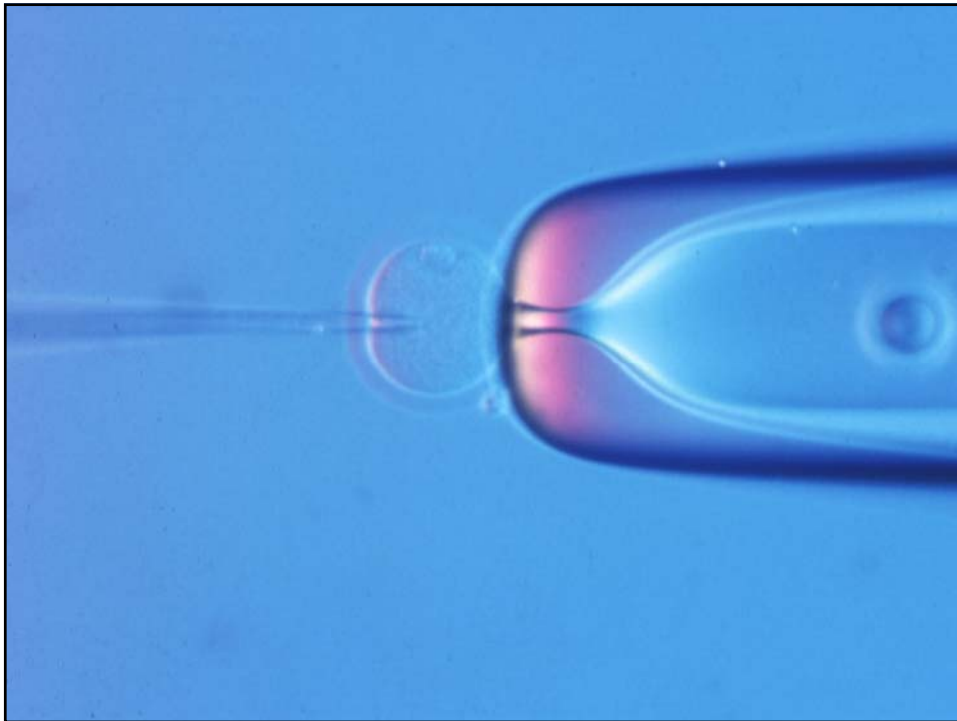
1. Partial obstruction of E.D. can produce a wide spectrum of semen abnormalities
2. TRUS recommended for:
 - a. semen vol. < 1.0 ml
 - b. motility < 30%
 - c. oligospermia
 - d. idiopathic infertility

Indications for TRUS

1. Azoospermia in the absence of testicular failure and retrograde ejaculation
2. Low ejaculatory volume

Don't

- indiscriminately get scrotal or transrectal ultrasounds.



Testicular Sperm Distribution in Azoospermia

Silber, et al

Human Reproduction 12:2422-2428, 1997

<u>Diagnosis</u>	<u>Mean No. Spermatids/ST</u>
NOA	0-6
Obstructive Azoospermia	17-35

Suggests: "4-6 mature spermatids/tubule...for any spermatazoa to reach the ejaculate."

Testis Biopsy

<u>Era</u>	<u>Purpose</u>	<u>Criteria</u>
Before ICSI (prior to 1992)	Diagnose NOA from obstructive azoospermia	Azoospermia and nl size testes or FSH <2-3 x ULN
After ICSI (post 1992)	Diagnose NOA from obstructive azoospermia and therapeutic (harvest sperm for ICSI)	Azoospermia

Don't

- biopsy the testicle unless the man has azoospermia

Testis Biopsy

1. Should be done only in azoospermic patients.
2. Should be done in all azoospermic patients.
3. Sperm should be frozen at time of diagnostic biopsy.

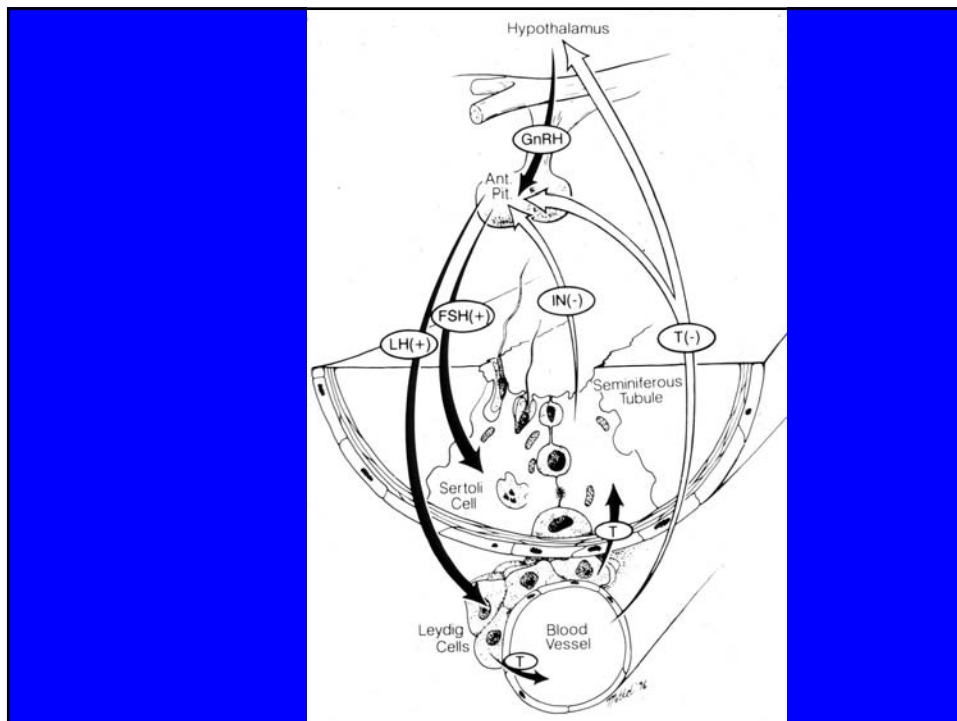
Don't

- do a vasogram at the time of testicular biopsy.



Don't

- treat immature germ cells as a sign of prostatitis.



Don't

- treat an infertility patient, who has low testosterone, with testosterone.

Summary and Conclusions

1. Ensure that both the male and female are evaluated.
2. The male should have an H&P and 2 semen analyses.
3. Don't indiscriminately get other tests (e.g., scrotal U.S., TRUS) unless indicated.
4. Biopsy all azoospermic males, but do so only if you can harvest/freeze sperm. Don't do a vasogram at time of testicular biopsy.
5. Don't treat an infertility patient with testosterone-it's a contraceptive.

Conclusions (continued)

6. Practice the 3 C's of management:
 - close follow-up
 - collaboration
 - communication

Summary

1. Biopsy all azoospermic males
2. Attempt to freeze sperm at the same time
3. Pathology predicts response to varicocelectomy in patients with varicocele
4. Pathology predicts likelihood of harvesting sperm for ICSI
5. Biopsy is fast, safe, and relatively inexpensive
6. Testicular pathology is not homogenous

Other Don'ts

- don't, in general, do bilateral testis biopsies.
- don't treat everyone with clomiphene citrate, especially those with a normal sperm concentration or a normal T and/or high FSH.
- don't get hormone levels in a man with a normal sperm concentration and normal sized testes.

Reasons for Performing a Testicular Biopsy in Azoospermia

1. Diagnose non-obstructive from obstructive azoospermia
2. Prognosis for response to varicocelectomy
3. Prognosis for sperm harvesting
4. Harvest sperm

