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Androlog Summary

Evaluation of Unexplained Secondary Azoospermia

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Although semen quality often fluctuates over time, it is relatively uncommon for a patient with documented fertility to develop azoospermia in the absence of an identifiable causative factor. This is the situation that arose in Dr Linda Morrison's clinic in what she described as "the case of the disappearing sperm."

We have an interesting patient who had 1 undescended/missing testicle as a child which was explored at age 10 with no success. He has 1 normal testicle. He has successfully fathered 4 children naturally in his 20s and 30s. He is now in a second relationship and has had one successful cycle of ICSI due to oligozoospermia, 3 years ago. His initial count at first investigation 4 years ago was 0.3 million/mL and at treatment a year later had dropped to 0.1 million/mL.

They recently went for a second cycle and discovered on the day of the procedure that there was no sperm present in the ejaculate. A PESA was performed at various sites in the epididymis and testicle with no success and the cycle was cancelled.

He is now 52 years old and the only possible detrimental effect we are aware of is a heavy alcohol intake of 4 drinks/day and 10 drinks/day at the weekend.

Has anyone seen similar cases of this kind of dramatic drop in sperm count over a period of time? Are there any known causes? What sort of further investigation should he be having?

Dr Harald Trummer replied suggesting a possible link to testicular intraepithelial neoplasia.

Regarding Dr Morrison's patient with declining sperm count, I would suggest performing testis biopsy and histology. Recently I saw several patients with declining sperm count and testicular intraepithelial neoplasia (TIN) in their biopsies.

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Dr Ahmed Mahmoud offered a number of suggestions regarding the evaluation of this patient.

Linda Morrison described a 52 year old man with history of unilateral cryptorchidism (or unilateral anorchia?) who fathered children naturally in his 20s– 30s and had a successful ICSI (with a second partner) due to oligozoospermia 3 years ago. Sperm count declined in the last 4 years from 0.3 million/mL to azoospermia and no sperm could be retrieved percutaneously in a second ICSI attempt either from the epididymis or testis. History of periodic heavy alcohol intake is present.

I would advise the patient to stop drinking for 6 months.

More details would be appreciated since the list of possible causes is long. In particular: hormonal profile (FSH, Prolactin, T), testicular histopathology (if available) and occupational history.

Medications (from personal experience some medications [eg, testosterone and anabolic steroids] are not mentioned spontaneously!).

A (subclinical) varicocele should be excluded, especially if semen volume is large (> 5 mL). This is a common cause of progressive deterioration of sperm quality and secondary infertility. In many of our patients with cryptorchidism, correction of this abnormality by embolization improved semen quality and resulted in spontaneous pregnancies (unpublished data).

Y chromosome microdeletion (AZFc): progressive deterioration of sperm quality (from oligo to azoo) over time has been described. This is less probable here as the patient presumably had normal fertility in the past.

Dr Jay Sandlow entered the discussion offering additional insight into possible causes for this patient's clinical condition as well as suggestions for evaluation.

Regarding Linda Morrison's question of the disappearing sperm, I think this case makes an excellent point regarding the need for all male factor patients to be evaluated by a urologist, particularly one trained in male infertility. First of all, with this man's history, he is at an increased risk for testicular cancer (even at his age), and I would hope that a scrotal ultrasound was obtained when it was found that he had become profoundly oligospermic. Furthermore, he may need at least a rectal exam and PSA, and possibly a transrectal ultrasound, as prostatic problems, including prostate cancer, can produce significant changes in seminal parameters. Also, a percutaneous epididymal sperm aspiration will not work in a non-obstructed patient. Although one of the responses to this question included the search for a subclinical varicocele, I know of no evidence to suggest that a small subclinical varicocele would produce this profound of an effect on semen parameters.

Finally, I think the most likely explanation is this man's heavy daily alcohol intake. Although the data is sketchy regarding alcohol consumption (a couple of case reports), this man is basically an alcoholic and likely has some secondary effects of this. I have also seen, anecdotally of course, significant improvement in seminal parameters in heavy drinkers who have abstained for at least 3– 6 months. At the very least, a complete hormonal evaluation, as well as a liver profile, is indicated.

I would be interested to know how if any of these issues have already been addressed, as well as follow up. Good luck!

Lastly, Dr David Karabinus referenced his own clinical experience regarding widely fluctuating semen quality.

Regarding the case involving the disappearing sperm, it may be prudent to determine whether the patient has diabetes. We had a patient in his late 40s, slightly overweight, who was otherwise healthy but that had diabetes that was not well controlled and he exhibited wild swings in his semen quality. Although his seminal volume was unaffected, sperm content ranged from low to nonexistent. Abstinence period was not an issue. They were being treated with IUI and his semen quality was always poor; sometimes there were sufficient sperm for a reasonable IUI prep and other times not. They eventually went to ICSI after multiple IUI attempts.

Of course, ruling out potential effects of medication, lifestyle, occupation exposure, trauma, other illness, etc should be performed.

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