

Case Study: Successful Medical Management for Klinefelter's Syndrome with HCG Injection

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Abstract: *The case study explores the successful medical management of Klinefelter's Syndrome for a 34 year old male patient with HCG injections. The treatment resulted in production of motile sperms demonstration the potential of this approach for patients with Klinefelter's Syndrome seeking to father children.*

Keywords: Klinefelter's Syndrome, Medical management, HCG injection, Azoospermia, Fertility treatment

1. Purpose

The purpose of this case study is to demonstrate the potential of HCG injections as a medical management strategy for patients with Klinefelter's Syndrome seeking to father children.

2. Study method

In this case study, we administered HCG injections twice weekly for 12 weeks to stimulate Leydig cells for sperm production. The patients semen was analyzed before and after the treatment to assess the effectiveness of the approach.

3. Significance

This case study is significant as it provides empirical evidence for the potential of HCG injections in treating Klinefelter's Syndrome, thereby offering a less invasive alternative to surgical sperm retrieval.

4. Introduction

The classic form of Klinefelter's syndrome (KS), which is present in 80–90 % of the cases, is defined by a 47, XXY karyotype resulting from the aneuploidy of the sex chromosomes. The prevalence of KS rises up to 3–4 % among infertile males and 10–12 % in azoospermic patients. It is the most frequent observed sex chromosomal anomaly, with an estimated frequency of 1: 500 to 1: 1000 men. KS has increased in the last years which might be related to the increasing paternal meiotic alterations. KS patients have a phenotype which is extremely variable. They might not have obvious facial dysmorphism that makes them indistinguishable from the boys with normal karyotype. Less severe or mild forms (most of which remain often undiagnosed) are characterized by paucisymptomatic manifestations like infertility alone. We are presenting an interesting case study of Klinefelter's patient who reported to us.

5. Case Presentation

34- year - old male reported to Tagore Medical Collegewith complaints of not able to father a child for 7 years since

marriage. The couple has been investigated at various hospitals nearby and the male partner was found to be azoospermic. He was evaluated in detail and was found to have hypogonadism. His testosterone values were 0.76ng/ml (3 - 10.6 ng/ml). Serum FSH was 36.10mIU/ml (1.7 - 12mIU/ml). Ultrasound scrotum revealed normal testis. His Karyotyping was 47XXY consistent with Klinefelter's Syndrome.

Treatment and Outcome

The patient was explained regarding his genotype. The patient was kept on his own gametes. Hence he was prescribed Inj HCG 2000 units weekly twice for 12 weeks in an attempt to stimulate his Leydig cells for sperm production as these patients are known to have focal spermatogenesis. After 12 weeks of treatment, his semen analysis revealed occasional motile sperms in pelleted sample. We went ahead to freeze his multiple semen samples which resulted in semen pooling thereby avoiding a more invasive surgical sperm extraction.

6. Discussion

Histologic studies in KS have shown that the reduction in germ cell number takes place during adolescence. While the testicular architecture is still intact, fibrosis is highly present in these patients. However, residual foci of spermatogenesis can be present in partial non - mosaic KS patients, which may allow them to father genetic their offspring with assisted reproductive technology (ART). A meta - analysis has suggested that sperm can be found in approximately 50% of men with non - mosaic KS, which can be obtained in the ejaculate after medical management or by surgical sperm retrieval and can yield pregnancy rates (PRs) and live - birth rates (LBRs) close to 50%. Our case study clearly shows that these patients should be given an opportunity for medical treatment with HCG injection prior to subjecting them to surgical sperm retrieval.

7. Conclusion

This case study demonstrates the potential of HCG injections as a successful medical management strategy for Klinefelter's Syndrome. The treatment resulted in the production of motile sperms, offering a less invasive alternative to surgical retrieval. Further research is needed to

validate these findings.

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