Sperm retrieval from patients with nonmosaic Klinefelter’s syndrome by semen cytology examination

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ABSTRACT. Successful sperm retrieval from ejaculates of nonmosaic Klinefelter’s syndrome (KS) patients by using semen cytology examination was described in this report. The clinical parameters of KS patients with sperm compared to patients without sperm were described. One hundred and fifty-one patients were proven to suffer from KS by chromosomal analysis using G-banding. Spermatozoa were obtained from 10 patients (10/151, 6.6%) using semen analysis. After semen cytology examination, 32 patients (32/151, 21.2%) were found to have sperm or germ cell in their ejaculate. The patients with successful sperm retrieval were significantly younger (27.1 ± 3.7 years) than the patients for whom sperm retrieval failed (28.9 ± 4.2 years). The mean serum testosterone level and the mean T/LH ratio of KS patients with successful sperm retrieval were significantly higher in men with sperm than in men without sperm (testosterone: 3.2 ± 2.1 ng/mL vs 2.7 ± 1.5 ng/mL; T/LH ratio: 0.2 ± 0.3 vs 0.1 ± 0.1). In conclusion, semen
cytology examination should be performed to identify sperm and germ cells in the ejaculate of KS patients if no sperm can be detected by traditional semen analysis. The serum testosterone level and T/LH ratio revealed an association between impaired Leydig cell function and impaired spermatogenesis in KS males. KS patients should receive earlier diagnosis and treatment.

**Key words:** Klinefelter’s syndrome; Semen cytology examination; Clinical characterization; Spermatogenic failure