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Letter to the editor

Iatrogenic Vas Deferens Injuries: Neglected Infertility Causing Traumas

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Medical or surgical related fertility impairments are called iatrogenic infertilities and contribute to nearly 5% of infertilities both in men and women (1, 2). Iatrogenicvas deferens injuries (IVDIs) as inadvertently medical conditions are critical complications of surgical operations in the inguinal region of children and adults (3). Inguinal herniorrhaphy, one of the most common therapies carried out worldwide by general and/or pediatric surgeons, is executedthrough using open, laparoscopic or pre-peritoneal approaches (4) and transection or ligation induced injuries account for about 25% of iatrogenic vas deferens damages (5). Moreover, accidental crushing of inguinal contents leading to unpredictable consequences is also unavoidable (6).

It is well documented that any scant disturbance in vas deferens tunica muscularisor mucosa will endanger fertility and unintentionally manipulations during inguinal hernia repair can cause perforation and/or obstruction of damaged vas deferens resulting in male fertility reduction (7, 8).It was found that vas deferens surgical manipulations such as grasping with toothed and/or non-toothed forceps, clamping with mosquito hemostats and electrocoagulation can induce histoarchitectural changes including intra- and trans-mural inflammatory reactions, mural and muscular wall disorganization and luminal destruction (4). Moreover, it is worth mentioning that vas deferens obstruction brings about testicular blood flow disturbance and finally testicular hypoxia along with atrophy (9). It has also been suggested that IVDIs can play crucial roles in formation of anti-sperm autoantibodies and sympathetic vasospasm leading to bilateral testicular deterioration as well as sperm motility and capacitation impairments (10-12). Recently, it has been reported that experimental unilateral IVDIs have injurious bilateral effects on epididymal sperm characteristics and in vitro fertilizing potential leading to early developmental arrests (13-15).

In line with that, it seems that non-recognized IVDIs may have destructive effects on spermatogenesis resulting in fertility problems (Fig. 1) and careful attention to surgical detail should be considered during inguinal region surgical procedures to prevent IVDIs. However, recent progresses in urological microsurgeries and assisted reproductive technologies provide remarkable improvements in fertility outcomes of patients even with serious iatrogenic reduction in fertility (16).

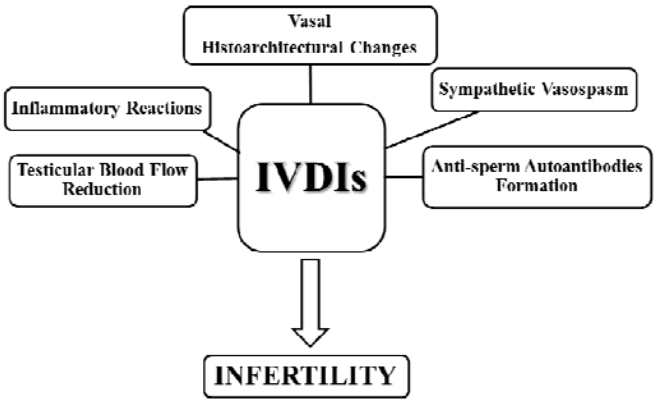

Fig. 1. Pathophysiology diagram of iatrogenic vas deferens injuries (IVDIs) induced infertility

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