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Examining the Differences between Microscopic Subinguinal Varicocelectomy and Open Varicocelectomy in Terms of Postoperative Complications and Recovery Length

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I. INTRODUCTION

A varicocele is a swelling of the veins within the scrotum, which is the sac that contains the testicles. Varicoceles are a common condition that can cause pain and fertility problems in men. The veins in the scrotum, which are called the pampiniform plexus, drain blood from the testicles and surrounding tissues back to the heart. A varicocele occurs when these veins become dilated and swollen, usually on the left side of the scrotum. Varicoceles are most commonly found in men between the ages of 15 and 25. They are thought to occur due to a problem with the valves within the veins, which can cause blood to pool and the veins to become dilated. The surgical treatment of a varicocele is called varicocelectomy. This procedure involves making a small incision in the scrotum and using a small instrument to tie off or remove the affected veins. Varicocelectomy is usually performed on an outpatient basis, and most men are able to return to their normal activities within a few days.

Varicocelectomy is usually recommended for men who have symptoms such as pain or discomfort in the scrotum, or for those who are trying to conceive and have been diagnosed with a varicocele. It is also sometimes recommended for men who have a varicocele and low sperm count or other fertility problems. Varicolectomy is a surgical technique to repair varicoceles, can be performed using either a laparoscopic, microscopic subinguinal or an open approach. The microscopic subinguinal technique involves making a small incision in the groin area and using magnification to identify and repair the varicocele, while the open technique involves making a larger incision in the abdomen and ligating the varicocele. Laparoscopic surgery is a type of minimally invasive surgery that is performed using small incisions and specialized instruments, including a laparoscope, which is a long, thin tube with a camera on the end.

II. MATERIALS AND METHODS

The records of 100 patients with varicocele grade 2 or higher were analyzed in a period of 10 years.Inclusion criteria for surgery were: exclusion of female factors for infertility, grade 2 or higher varicocele, known sperm abnormalities, and informed consent. Exclusion criteria were: prior varicocelectomy, previous hernia surgery, and a history of scrotal surgery. The patients were randomly assigned to either the microscopic subinguinal group or the open group. The primary outcome measures were postoperative complications and postoperative recovery.

III. RESULTS

The results showed that there were significantly fewer postoperative complications in the microscopic subinguinal group compared to the open group ($p<0.001$). The most common complications in the open group were hydrocele formation (7% to 33%), recurrence (15%), and testicular atrophy (0.5-1.5 mm). In contrast, the microscopic subinguinal group had a low rate of hydrocele formation (<1%) and recurrence (<2%), and no cases of testicular atrophy. The postoperative recovery time was also shorter in the microscopic subinguinal group, with a median of 7 days compared to 14 days in the open group ($p<0.001$).

IV. DISCUSSION

The results of this study suggest that microscopic subinguinal varicocelectomy is a superior surgical approach compared to open varicocelectomy in terms of postoperative complications and postoperative recovery. The use of magnification and the subinguinal incision allow for a more precise identification and ligation of the varicocele, while minimizing the risk of hydrocele formation and recurrence. Additionally, the shorter recovery time in the microscopic subinguinal group may be attributed to the less invasive nature of the procedure and the resulting lower levels of postoperative pain.

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V. FOLLOW-UP

Further studies are needed to confirm the findings of this study and to assess the long-term effects of these two surgical approaches on fertility outcomes. In particular, it would be interesting to follow up on the couples who underwent varicocelectomy in order to determine the success rate of pregnancy and the impact on sperm quality and quantity.

VI. NEED FOR ANALGESIA

Both surgical approaches may require pain management during the postoperative period. The use of non-opioid analgesics, such as acetaminophen or ibuprofen, may be sufficient for mild to moderate pain. More severe pain may require the use of opioid analgesics, such as oxycodone or morphine, which should be used with caution due to the risk of dependence and overdose. It is important for patients to discuss their pain management options with their surgeon and to follow their prescribed pain management plan.

VII. RECOVERY TIME

The recovery time after varicocelectomy may vary depending on the surgical approach and the individual patient. In this study, the median recovery time for the microscopic subinguinal group was 7 days, while the median recovery time for the open group was 14 days. Factors that may affect recovery time include the severity of the varicocele, the presence of comorbidities, and the patient's age and overall health.

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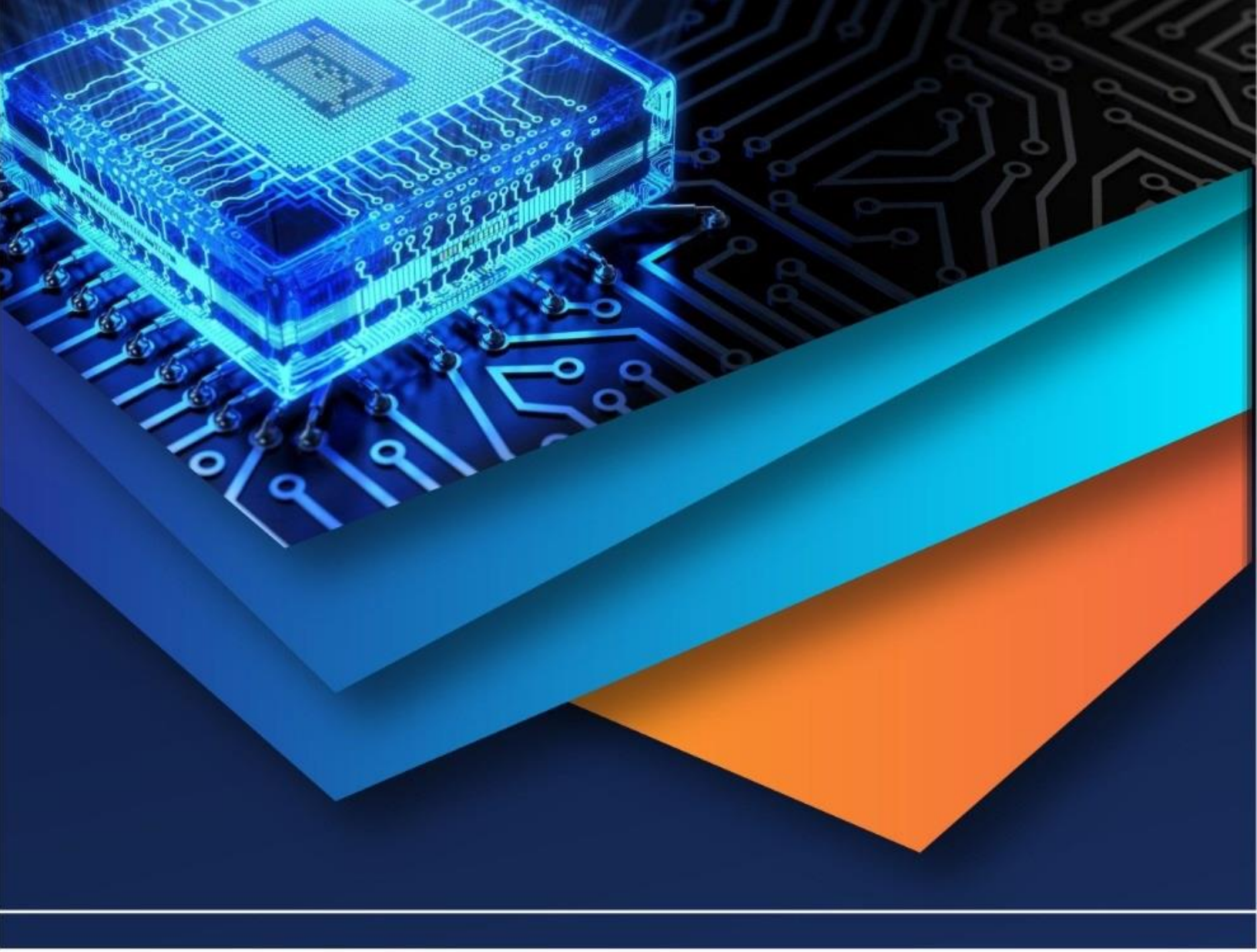

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