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# A prospective study on femoral hernia repair: is the inguinal better than the infrainguinal approach?



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## ABSTRACT

**Background:** Femoral hernia repair has various surgical methods. However, controversy still exists regarding the best method for management. This study aimed to compare the infrainguinal with the inguinal approach in the treatment of femoral hernias.

**Materials and methods:** Eighty patients with primary unilateral femoral hernias were prospectively randomized to either the infrainguinal ( $n = 40$ ) or inguinal approach groups ( $n = 40$ ). Patient demographics, operative time, duration of hospital stay, postoperative complications, and recurrence rate were recorded.

**Results:** There were no statistically significant differences between both study groups with respect to the patients' demographics and associated comorbidities. Regarding inpatient outcomes, there were no differences between the infrainguinal and inguinal approach groups concerning the postoperative duration of stay ( $P = 0.248$ ), urinary retention ( $P = 0.494$ ), superficial wound infection ( $P = 0.494$ ), seroma ( $P = 0.615$ ), foreign body sensation ( $P = 0.615$ ), and chronic pain ( $P = 0.359$ ). However, total complications were encountered in 3 patients (7.5%) in the infrainguinal approach group compared to 11 patients (27.5%) in the inguinal approach group ( $P = 0.037$ ). Also, the mean operative time was significantly shorter in the infrainguinal approach group compared to that in the inguinal group ( $P < 0.001$ ). Throughout the 15 mo median follow-up duration, there was no recurrence in the inguinal approach group and one (2.5%) recurrence in the infrainguinal approach group ( $P = 1.000$ ).

**Conclusions:** In patients undergoing elective primary femoral hernia repair, the infrainguinal approach has a similar clinical curative effect to that of the inguinal approach. However, the former has the advantages of simple operation, short operation time, and fewer complications.

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## Introduction

Femoral hernias account for 2%-4% of groin hernias<sup>1,2</sup> but are clinically crucial because they are associated with a higher rate of emergency surgery and bowel resection.<sup>3,4</sup> Gallegos *et al.* relate that the cumulative probability of strangulation for inguinal hernias was only 2.8% after 3 mo, then rising to 4.5% after 2 y. However, for femoral hernias, the cumulative probability of strangulation was 22% at 3 mo and 45% at 21 mo.<sup>5</sup> Dahlstrand *et al.* reported that 10% of emergency patients with a femoral hernia were on the waiting list before surgery and, 30% of them were reported to be on the list for less than 1 mo.<sup>6</sup> Thus, once the diagnosis of a femoral hernia is confirmed, elective surgery should be advised.<sup>6-9</sup>

The traditional suture is the tension repair of tissue to tissue. The classic operation is a McVay operation with a recurrence rate of up to 10%-15%.<sup>2,10,11</sup> Tension-free herniorrhaphy overcomes the shortcomings of the traditional techniques to a large extent. Since Lichtenstein and Shore started using the plug to treat femoral hernia in 1968, plug insertion into the femoral canal has become a widely accepted technique in femoral hernia surgery.<sup>12</sup> The infrainguinal plug technique has always been a favorite for its simplicity, safety, and remarkable effectiveness.<sup>13,14</sup> Despite its utility, mesh plug repair has been reported to be associated with a substantial recurrence rate, a post-operative sensation of a foreign body in the inguinal region, and seromas.<sup>15</sup> In recent decades, the use of the inguinal approach in preperitoneal repair of femoral hernias is increasing. A report by Zandi *et al.* indicated satisfactory results using this technique for femoral hernia repair.<sup>16</sup> However, this operation has its shortcomings because it is technically difficult and time-consuming and disrupts an

otherwise normal floor on the inguinal canal.<sup>11</sup> Thus, until now, although many techniques exist for hernia repair, controversy still exists as to the best management of femoral hernias.

Owing to the relatively low incidence of femoral hernias, the accumulation of a large number of clinical cases is difficult; thus, few prospective studies have analyzed the effectiveness of different repair techniques.<sup>15,17</sup> In this prospective study, we compared the outcomes of the infrainguinal and inguinal approaches in the treatment of primary unilateral femoral hernias.

## Materials and methods

### Patient population and study design

The study was approved by the ethics committees of West China Hospital, Sichuan University. Informed consents were obtained from all patients who agreed to participate in the study. Patients with bilateral, recurrent, and emergency femoral hernias were excluded (Figure). Data regarding age, sex, body mass index (BMI), and associated comorbidities were obtained from all patients. Following preoperative evaluation and preparation for surgery, patients were randomly assigned to either the infrainguinal approach group (40 patients) or inguinal approach group (40 patients). Randomization was performed according to the random number table. Randomization and patients' allocation in either group were managed by an independent observer. The independent observer also measured the operative time in the present study. The study was conducted at the West China Hospital, Sichuan University, from May 2016 to December 2017.

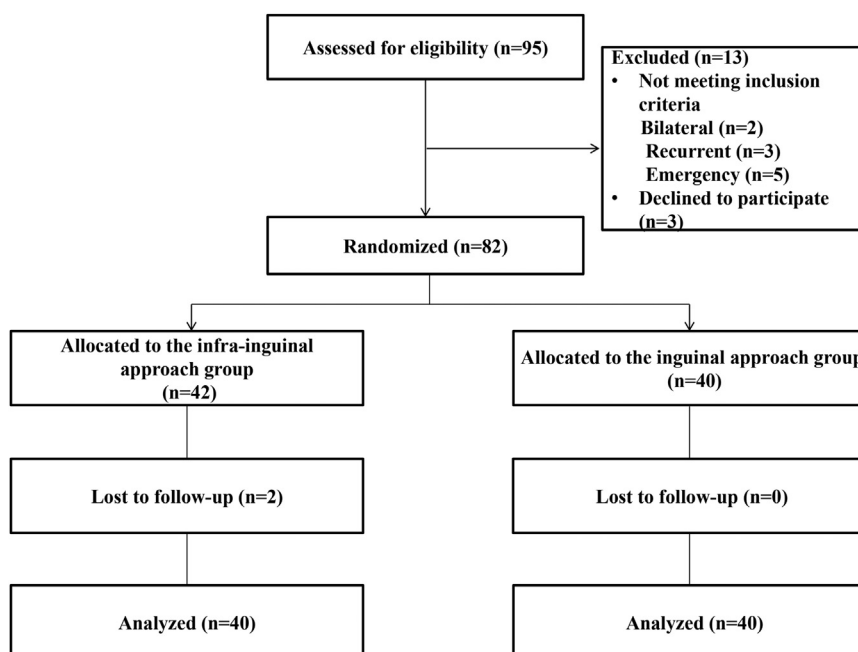


Fig – Patient flow diagram.

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