Comparison of 3D Printing-Assisted Transrectus Abdominis Lateral Incision and Traditional Ilioinguinal Approach in the Treatment of Pelvic Fracture

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Purpose: We sought to compare the clinical effects of 3-dimensional (3D) printing-assisted transrectus abdominis lateral incision and traditional ilioinguinal approach in the treatment of pelvic fracture.

Methods: From June 2017 to July 2020, 46 patients with pelvic fracture who were treated in the orthopaedic department in our hospital were selected as research subjects; they were randomly divided into the experimental group and the control group, with 23 patients each. The control group was given traditional ilioinguinal approach surgery, while the experimental group was given 3D printing-assisted transrectus abdominis lateral incision surgery. The hip function, pain visual analog scale score, operation time, postoperative drainage volume, hospital stay, length of incision, and complications were compared between the two groups.

Results: After 6-month follow-up, the excellent and good rate of hip function in the experimental group was significantly higher than that in the control group, with statistical significance ($P<0.05$); the hip function score in the experimental group was significantly higher than that in the control group, and the visual analog scale pain score was significantly lower than that in the control group, both with statistical significance ($P<0.05$). The operation time and hospital stay in the experimental group were significantly shorter than those in the control group, the postoperative drainage volume was significantly less than that in the control group, and the length of incision in the experimental group was significantly shorter than that in the control group, with statistical significance for all ($P<0.05$); the total incidence of complications in the experimental group was significantly lower than that in the control group, with statistical significance ($P<0.05$).

Conclusion: Compared with the traditional ilioinguinal approach, the 3D printing-assisted transrectus abdominis lateral incision approach in the treatment of patients with pelvic fractures can shorten the recovery time of hip function and receive more significant effect.