·临床论著·

青少年创伤性踝内翻截骨矫正两种固定比较△

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摘要：［**目的**］比较踝上截骨（supramalleolar osteotomy, SMOT）钢板内固定与 SMOT 联合 Ilizarov 架牵伸治疗青少年创伤性踝关节内翻畸形（traumatic ankle joint varus deformity, TAVD）临床疗效。［**方法**］回顾性分析 2015 年 2 月—2022 年 2 月在本院治疗的 30 例青少年 TAVD 患者的临床资料。根据医患沟通结果，16 例采用 SMOT 解剖钢板内固定治疗（内固定组），14 例采用 SMOT 联合Ilizarov 外固定治疗（外固定组）。比较两组围手术期、随访与影像资料。［**结果**］内固定组在手术时间 [(90.0±11.6) min *vs* (102.1±9.1) min, *P*=0.004]、住院时间 [(13.3±4.4) d *vs* (18.5±5.3) d, *P*=0.007] 显著优于外固定组，但前者在术中失血量 [(156.9±46.7) ml *vs*(90.7±14.4) ml, *P*<0.001]、切口总长度 [(14.5±2.3) cm *vs* (4.6±0.8) cm , *P*<0.001] 、下地行走时间 [(71.7±16.7) d *vs* (5.6±2.3) d, *P*<0.001] 显著不及后者。随访时间平均（20.6±3.5）个月，术后随时间推移两组 VAS、AOFAS 评分显著改善（*P*<0.05）。术后 6 个月，内固定组 VAS 评分显著优于外固定组 [(1.3±1.3) *vs* (2.6±1.6) , *P* =0.023]。影像方面，与术前相比，术后两组 TT、TAS 角及Takakura 分期均显著改善（*P*<0.05）。术后 3 个月，内固定组 TAS 角 [(89.8±1.4)° *vs* (87.6±3.4)°, *P*=0.036] 及 Takakura 分期 [0/I/II/II-Ia/IIIb/IV , (2/11/3/0/0/0) *vs* (0/7/6/1/0/0) , *P*=0.038] 显著优于外固定组（*P*<0.05）。［**结论**］两种手术固定方式均能有效治疗青少年TAVD。与内固定相比，外固定组具有手术创伤小、出血少、早期负重活动、避免植骨等优势，但存在手术时间长、住院时间长、术中透视多，患者痛苦大等缺点。

关键词：青少年，创伤性踝内翻，踝上截骨，内固定，外固定

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Internal fixation versus external counterpart in supramalleolar osteotomy for correction of traumatic ankle joint varus deformity in adolescents // *ZHAO Bo[1], WANG Xue[1], WANG Cheng-wei[2], HAI Ji-zhe[3], Ayidin Shahatai[1], TUO Ya-nan[1], Akeremu Wupur[1], Parhati Wahafu[1]. 1. The Sixth Affiliated Hospital, Xinjiang Medical University, Urumqi 830002, China; 2. Affiliated Cancer Hospital, Xinjiang Medical University, Urumqi 830000, China; 3. Xinjiang University, Urumqi 830000, China*

Abstract: [**Objective**] To compare clinical efficacy of supramalleolar osteotomy (SMOT) with plate internal fixation (IF) versus external fixation (EF) by distracting Ilizarov frame for traumatic ankle joint varus deformity (TAVD) in adolescents. [**Methods**] A retrospective analysis was performed on 30 adolescent patients with TAVD treated in our hospital from February 2015 to February 2022. According to doctor-patient communication, 16 patients had SMOT with IF of anatomical plate, while other 14 patients were treated with SMOT with EF of distracting Ilizarov frame. The perioperative, follow-up and imaging data of the two groups were compared. [**Results**] The IF group proved significantly superior in terms of operation time [(90.0±11.6) min *vs* (102.1±9.1) min, *P*=0.004] and hospital stay [(13.3±4.4) days *vs* (18.5±5.3) days, *P*=0.007], whereas significantly inferior to the EF group in terms of intraoperative blood loss [(156.9±46.7) ml *vs* (90.7±14.4) ml, *P*<0.001], total incision length was [(14.5±2.3) cm *vs* (4.6±0.8) cm, *P*<0.001], and postoperative ambulation time [(71.7±16.7) days *vs* (5.6±2.3) days, *P*<0.001]. The mean follow-up period lasted for (20.6±3.5) months on an average, and the VAS and AOFAS scores in both groups weres ignificantly improved over time (*P*<0.05). Morever, the IF proved significantly better than the EF group regarding VAS score 6 months post-operatively [(1.3±1.3) *vs* (2.6±1.6), *P*=0.023]. Regarding image, talus title (TT), tibial anterior surface angle (TAS), and Takakura scale weresignificantly improved in both groups after surgery compared with those preoperatively (*P*<0.05). The IF group was significantly superior tothe EF group in terms of TAS [(89.8±1.4)° *vs* (87.6±3.4)°, *P*=0.036] and Takakura grade [0/I/II/IIIa/IIIb/IV, (2/11/3/0/0/0) *vs* (0/7/6/1/0/0) , *P*=0.038] 3 months after surgery. [**Conclusion**] Both fixation methods in SMOT are effective in the treatment of juvenile TAVD. Compared

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