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## · 病例报告 ·

## 吻合隐神经的内踝上皮瓣带蒂移植修复对侧足跖内侧软组织缺损 1 例

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关键词 足; 软组织缺损; 神经吻合; 皮瓣

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### Repair of a soft tissue defect of the medial plantar region of the contralateral foot with the medial supramalleolar flap pedicle graft with anastomosed saphenous nerve: a case report

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**KEYWORDS** Foot; Soft tissue defect; Nerve anastomosis; Flap

患者,女,9岁。因重物砸伤致左足底内侧软组织缺损,在外院行常规游离植皮失败3周后,于2019年3月13日入院。检查:左足底内侧软组织缺损4cm×5cm,伴第1跖趾关节部分关节囊和肌腱外露。创面内侧至足内侧缘,外侧至第3趾外侧纵轴线,远端至趾间关节近侧,近侧至跖内侧中远交界处(图1a)。足背动脉搏动和趾端循环与足趾活动正常。

治疗方法:行吻合隐神经的右侧内踝上皮瓣交

腿带蒂移植修复左侧足底内侧软组织缺损。术前行彩色多普勒检查,发现在右侧内踝10cm处有供应皮瓣血供的穿支血管并做好标记(图1b)。然后,在腰麻下按术前穿支血管位置,设计比受区稍大(5cm×6cm)的右侧内踝上(内踝尖上约7cm处)椭圆形皮瓣(图1c)。在充气止血带下,先切开皮瓣外侧和上下缘,从深筋下向皮瓣内侧游离皮瓣,注意保护胫骨骨膜的完整性。分开比目鱼肌与趾长屈肌之间的肌间隙,发现穿支血管起自胫后动脉,与术前彩色多普勒检查的位置相一致(图1d)。保护穿支血管,在皮瓣近侧沿大隐静脉找出与其伴行的隐神经,

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向皮瓣近侧游离约 5 cm 后将其切断(图 1e),后侧保留 2 cm 左右皮瓣蒂。松止血带后皮瓣血运良好,于皮瓣近、远结扎切断大隐静脉。将左膝屈曲约 90°,使足部创面与皮瓣相靠拢,并用单臂外固定架维持位置。用皮瓣修复左足部创面,将皮瓣携带的隐神经与左足背内侧皮神经行端-端吻合。术后皮瓣血运良好,于 2 周后行常规断蒂训练。皮瓣颜色及血运良好,术后 3 周行常规断蒂术(图 1f)。去除外固定架,将供区创面经缩小缝合后,从同侧股部取中厚皮片行游离植皮修复剩余创面。

断蒂术后供区与受区愈合良好,皮瓣略肿胀,逐渐行不负重行走。术后 6 周复查,皮瓣肿胀消退且有感觉恢复,但比周边正常皮肤稍差。断蒂后及术后 0.5、2 年定期随访(图 1g-1h),末次随访时,感觉恢

复较好(两点分辨觉 6~8 mm),皮瓣颜色、厚薄与外形恢复较满意,足部功能恢复良好,没有发生受区皮肤破溃或溃疡。

### 讨论

对于足部负重区软组织缺损的修复,主张应用吻合感觉神经的皮瓣修复,以免日后行走时发生皮肤破溃或溃疡<sup>[1-3]</sup>。当没有可供利用的局部皮瓣修复足部创面时,LIANG 等<sup>[4]</sup>应用对侧皮瓣修复,取得满意效果。但由于没有行感觉神经吻合,不适宜行足负重区的修复。本病例在足底负重区有软组织缺损伴部分关节囊和肌腱外露,创面缺损较大,难以用局部皮瓣转移修复,由于创面在足跖内侧负重区,需行吻合神经的皮瓣修复。笔者设想:利用小腿内侧皮瓣可切取隐神经的特点<sup>[5-6]</sup>,可行吻合隐神经的右侧内踝



**图 1** 患儿,女,9 岁,主因重物砸伤致左足底内侧软组织缺损,游离植皮失败 3 周入院 **1a**. 术前左足底内侧软组织缺损 4 cm×5 cm,伴第 1 跖趾关节部分关节囊和肌腱外露 **1b**. 术前行彩色多普勒检查,显示穿支血管位置 **1c**. 术前以穿支血管位置设计距内踝尖上约 7 cm,大小为 5 cm×6 cm 的椭圆形皮瓣 **1d**. 术中显示穿支血管 **1e**. 术中显示切取隐神经 **1f**. 皮瓣断蒂后受区外形,局部轻微肿胀,血运正常,皮肤颜色略青紫 **1g**. 术后 0.5 年供区与受区外形正常,感觉及血运良好 **1h**. 术后 2 年受区血运良好,皮肤外形及感觉恢复较好(两点分辨觉 6~8 mm),皮瓣颜色、厚薄与外形恢复较满意,足部功能恢复良好,没有发生受区皮肤破溃或溃疡

**Fig.1** A 9-year-old girl, was admitted to the hospital with a 3-week failure of free skin grafting due to a soft tissue defect in the medial part of the left plantar due to a heavy object injury **1a**. The left medial plantar soft tissue defect was 4 cm×5 cm, accompanied by partial capsular and tendon exposure of the first metatarsophalangeal joint before operation **1b**. Color Doppler examination was performed before operation to show the location of perforator vessels **1c**. A 5 cm×6 cm oval flap was designed with perforator vessel position about 7 cm from the medial malleolus tip before operation **1d**. Perforator vessels were visualized intraoperatively **1e**. The saphenous nerve was dissected intraoperatively **1f**. The appearance of the recipient area after the pedicle of the flap was broken was slightly swollen, the blood supply was normal, and the skin color was slightly blue and purple **1g**. The appearance of the donor and recipient sites was normal, and the sensation and blood supply were good six months after operation **1h**. Two years after operation, the blood supply

in the recipient area was good, the skin appearance and sensation recovered well (two-point discrimination 6 to 8 mm), the color, thickness and appearance of the flap recovered satisfactorily, and the foot function recovered well, without skin ulceration or ulcer in the recipient area

上皮瓣,交腿带蒂移植修复左侧足跖内侧软组织缺损。该例经临床观察和随访,感觉恢复较好,未发生受区皮肤破溃与溃疡。皮瓣颜色、厚薄与外形恢复较满意,足部功能恢复良好。

该项技术的优点:(1)利用内踝上皮瓣的穿支血管供血,不损伤肢体主要血管。(2)带蒂移植,无须吻合血管,降低了手术难度,很适宜在基层医院应用。(3)供区隐神经和受区足背内侧皮神经解剖与切取较易。(4)皮瓣颜色、厚薄与质地较好,修复后外形恢复较满意,不需后期行皮瓣修薄术。(5)隐神经切取后对供区没有明显的功能丧失。

操作注意事项:(1)由于是带蒂皮瓣移植,蒂部应宽松,便于后期行断蒂训练。(2)皮瓣携带的隐神经向近侧多游离约 5 cm,便于有足够的长度与受区足背内侧皮神经吻合。(3)术前行供区彩色多普勒检查,确定并标记出供应皮瓣血供的穿支血管位置,有利于皮瓣切取,避免了因穿支血管位置变异对皮瓣切取的影响。(4)用单臂外固定架维持位置双小腿的位置较为重要,以防止因固定不当发生皮瓣撕脱。

该项技术的缺点:(1)需 2 次手术,延长了治疗时间。(2)双下肢需制动,给患者生活带来不便<sup>[7]</sup>。

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