



# Closure of Large Sacral Defects using Oblique-vector Design Bilateral Perforator Flaps: The Walking Crab Technique

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Perforator flaps have been successfully applied in the treatment of decubitus ulcer.<sup>1–3</sup> Large flaps extending to the lumbar or posterior thigh area are needed in the large sacral defects. In this situation, the distal area of the flap may stay outside the angiosome region of the pedicle and cause circulation problems.

The flaps, described in detail here, are planned within the boundaries of the gluteal region, in accordance with the principles of the angiosome. Due to the use of local tissues covering the defect area, the flaps are moved shorter distances with excellent blood supply, and the donor area is closed primarily. We call this technique “the walking crab,” because its final scar resembles a walking crab.

**Operative planning:** An imaginary rectangle (ACDF) was planned with the borders of the four corners of the defect. An imaginary line (x), drawn from the midline, divides the

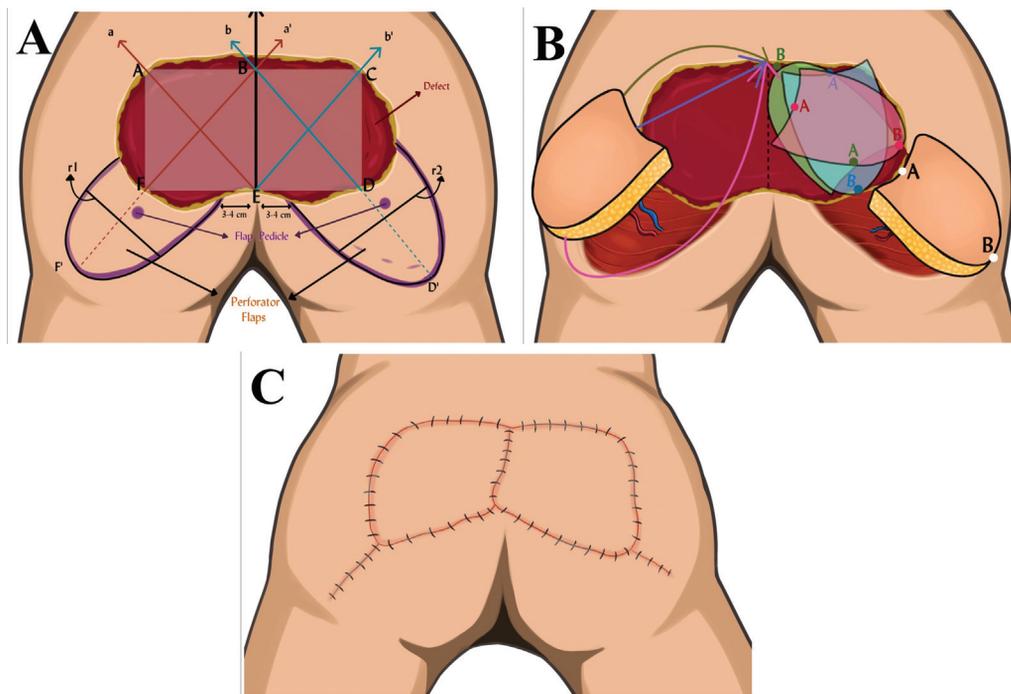
defect into two, right and left. A separate reconstruction plan is made for both regions. Draw diagonals to cross the x line at a 45-degree angle (a-a' and b-b'). The axis of the a' and b lines determine the long axis of the flap. The length of the flap (F-F' and D-D') is approximately 2 to 3 cm longer than the length of the a' and b lines inside the defect (BF and BD). Its width (r1 and r2) depends on the length of the a and b' lines within the defect (EA and EC), which are planned equally. The medial flap border starts 3 to 4 cm lateral to the midline and ends elliptically to the midline of the lateral of the defect. Surgical details are shown in **►Fig. 1**.

We have utilized this technique in eight patients. The average postoperative follow-up duration was 16.1 months, and no recurrence was observed (**►Fig. 2**). This procedure provides tension-free closure with local flaps in a single session for large sacral defects.

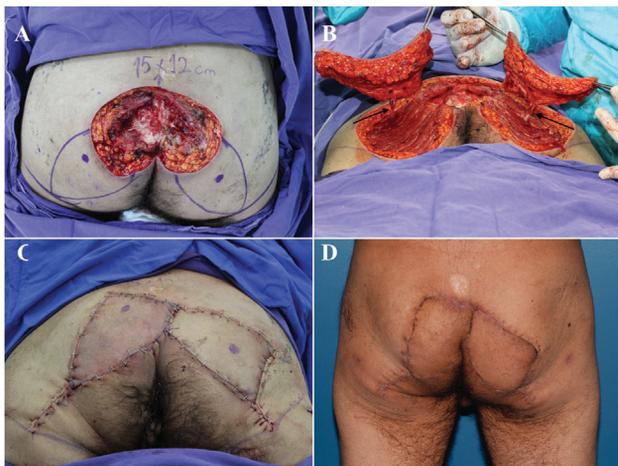
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**Fig. 1** (A) Preoperative markings (B) A propeller advancement or rotation design can be selected for pedicled perforator flaps. (C) Final result.



**Fig. 2** (A) The defect measured 15 × 12 cm. Preoperative hand-held Doppler assessment to locate the perforator was performed (marked arrow); (B) Perforators were dissected on both sides. (C) The right flap was adapted to the defect with rotated 180 degrees and the left flap was adapted with rotation and advancement. (D) Photograph of the patient at long follow-up period.

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None.

#### Funding

None.

#### Conflicts of Interest

None declared.

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