Transversalis Fascia Scoring: A New Adjunct to Component Separation

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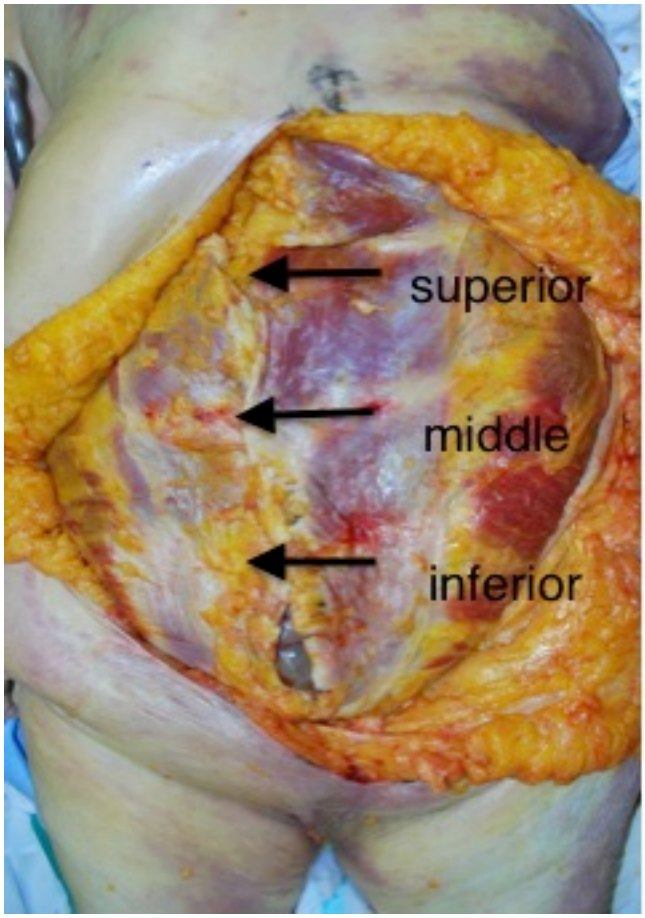
Background: Abdominal wall hernia is the most common complication after a laparotomy and cause for a reoperation [1]. More than 105, 000 ventral hernia repairs are performed annually[2]. Separation of the components is a widely used technique for closure of abdominal wall defects since the original studies by Ramirez in 1990 [3]. We propose that adding scoring of transversalis fascia to component separation can provide additional midline advancement of the anterior rectus sheath. We have investigated the utility of this technique using a cadaver model.

Methods: We used six cadavers to investigate the results of our proposed new method. The age, sex, time of death and presence of abdominal scars were noted. We performed a component separation as originally described by Dr. Ramirez, by elevating bilateral sliding myofascial rectus abdominis flaps. The medial advancement of the anterior rectus sheath was recorded at three points along the leading edge of the anterior rectus sheath bilaterally: 7 cm proximal to umbilicus (superior), umbilicus (middle), and 7 cm distal to umbilicus (inferior). Figure 1.The advancement was recorded in centimeters using a hand held scale (Protégé®), while applying a constant load of 5 lb. Measurements were performed independently by two of the investigators. A mean value was calculated for measurements at each point. Then, scoring of the transversalis fascia using three parallel lines to the midline, advancing lateral to medial, spaced 1 cm apart was performed. Medial advancement of the anterior rectus sheath was again recorded.



Results: Performing component separation alone provided a mean of 2.4 cm, 3.4 cm, and 3.2 cm advancement at superior, middle, and inferior points, respectively. After transversalis fascia scoring was performed, mean advancement measurements were: 3.1 cm, 4.3 cm, and 4.0 cm for superior, middle and inferior points respectively. Transversalis fascia scoring provides additional 37.0%, 31.1%, and 23.8% advancement at each point when compared to component separation alone. Table 1.

Table 1.

	Superior	Middle	Inferior
Before Scoring (cm)	2.40	3.40	3.20
After Scoring (cm)	3.10	4.30	4.00
Percent Increase (%)	37.00	31.10	23.80

Conclusion: Our results demonstrate that adding transversalis fascia scoring in a controlled standard fashion to component separation can provide greater medial advancement of the anterior rectus sheath. Our proposed technique can help plastic surgeons treat abdominal wall defects, when component separation alone is not sufficient. We find our results to be promising and plan further clinical studies to follow.

References:

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