

Dynamic Abdominoplasty for Treatment of Prune Belly Syndrome

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Abstract

Background: Prune belly syndrome is quite rare and is characterized by deficient abdominal wall musculature, intra-abdominal testes, and a dilated urinary collecting system. Absent abdominal musculature may result in chronic constipation, urinary retention, frequent respiratory infections, and poor balance. Traditional abdominoplasties provide only transient improvement in appearance and have little impact on function. We reviewed what we believe to be the first reported series of prune belly abdominoplasties utilizing bilateral rectus femoris muscles transpositions.

Methods: A retrospective chart review of all patients undergoing prune belly abdominoplasties was undertaken. The abdominal wall was reconstructed with bilateral rectus femoris transpositions in addition to abdominal fascial plication. Records were reviewed for operative data, complications and functional outcomes.

Results: Over a 16-year period 10 children (9 males, 1 female) were treated, and 8 underwent rectus femoris transfers. The mean surgical age was 36 months (range: 12-160 months), and the average hospital length of stay was 8.6 days. Our protocol included total parental nutrition, as a prolonged postoperative ileus was noted in those undergoing simultaneous intra abdominal procedures (orchidopexy, nephrectomy, etc.). The mean length of follow up was > 2 years. There were 3 complications noted among the 8 dynamic abdominoplasties; 1 urinary tract infection, 1 chylous leak, and 1 umbilical necrosis. Two patients had improvements in chronic constipation, two patients had less frequent urinary tract infections, and most reported improved pulmonary status. Palpable postoperative abdominal muscular contractions and improvements in balance, posture and mobility, were noted in all patients undergoing muscle transpositions.

Conclusions: A prune belly abdominoplasty, augmented with bilateral rectus femoris muscle transfers, appears to offer measurable functional benefits to affected individuals. In addition to enabling increases in intra abdominal pressure, this procedure conceptually provides a muscular balance to the spinal cord, which was clinically identifiable by improved posture and ambulation.