

Mini-Septal Dermoplasty for Pediatric Recurrent Epistaxis

Robert Liebman, MD, Karthik Bhat MD, Evan Somers, MD, Eric Dobratz MD, David Darow, DDS, MD
Department of Otolaryngology-Head and Neck Surgery, Eastern Virginia Medical School, Norfolk, VA



Introduction

- Recurrent epistaxis is a common condition in children
- Pediatric nosebleeds originate at Kiesselbach's plexus or Little's area
- Most are self-limited and improve with avoidance of trauma, regular use of hydration and lubrication
- Occasionally, refractory cases may require in-office procedures such as simple cautery or brief packing
- In rare cases, recurrent epistaxis events may continue despite conservative measures
- Removal of the offending mucosa and replacement with a skin graft, known as septal dermoplasty and has been used in the management of refractory epistaxis in patients with hereditary hemorrhagic telangiectasia (HHT) and in children with coagulopathy
- In the modified procedure (MSD), the mucosal resection is limited to the offending hypervascular mucosa in Little's area, requiring only a small skin graft. This modification maintains normal nasal moisturization and patency, and results in little to no residual scarring at the donor site.

Methods

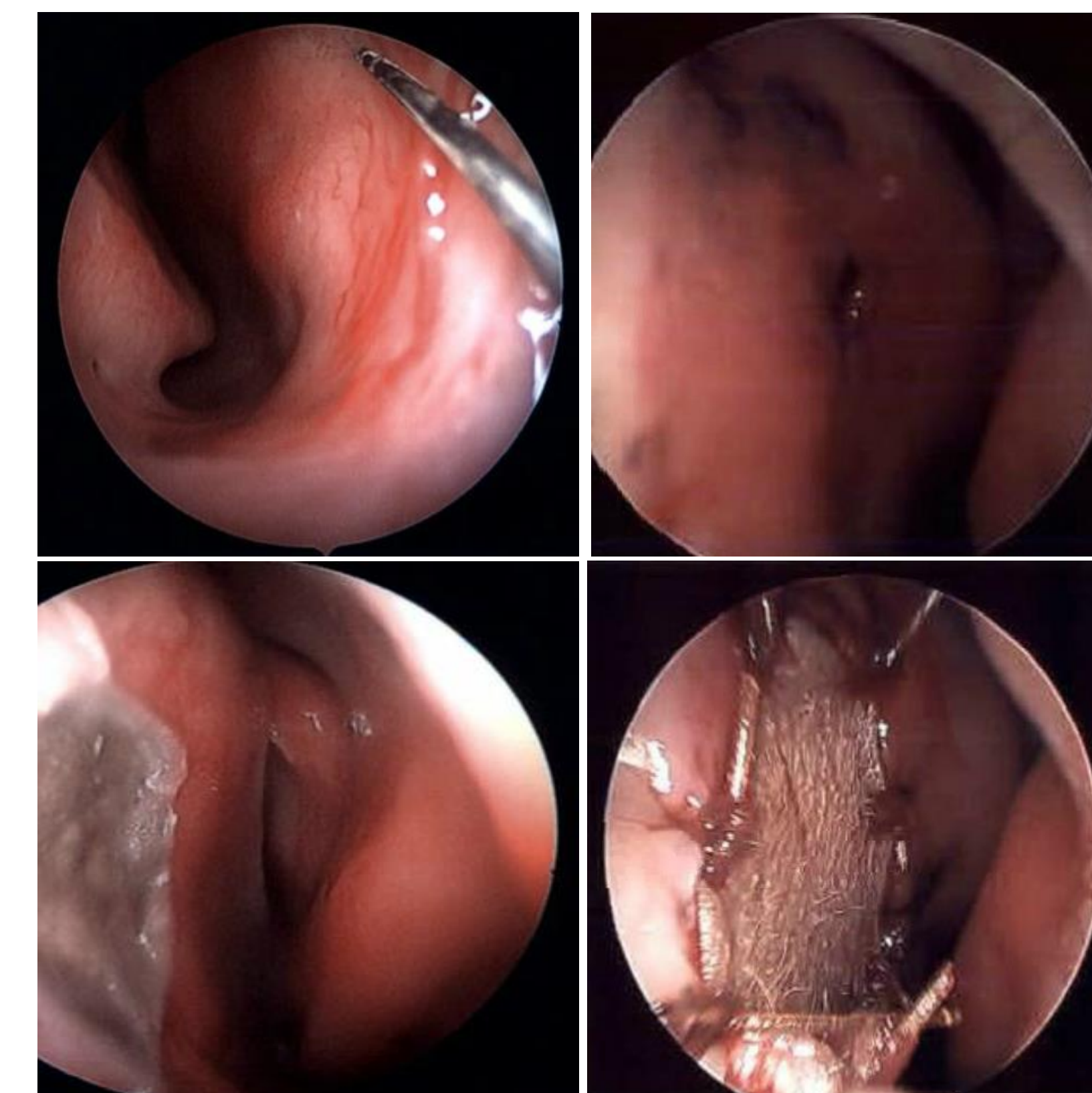
- Retrospective review.
- Demographics (age, sex, race), epistaxis frequency, and interventions prior to the MSD procedure were recorded
- Procedure data: laterality, graft location, graft size, operative time, and estimated blood loss were recorded
- Post-operative data: graft healing, residual epistaxis, and nasal symptoms was recorded
- 13-item non-validated questionnaire was developed and administered to parents/guardians of included patients

Results

Number of patients	6
Gender	2 male, 4 female
Age at procedure	8.5 (median) (range: 6-15)
Race	4 AA, 1 Caucasian, 1 Multiracial
Total # of nasal interventions for bleeding prior to MSD	3.5 (median) (range: 3-8)
# of office interventions prior to MSD	2.5 (Median) (Range : 1-8)
# of operative interventions prior to MSD	0.5 (Median) (Range : 0-3)
Time (months) between nasal interventions	Median :11.3 Mean : 8.9
Time from 1st intervention to MSD (months)	Median : 40.0 Mean : 41.5
Medical comorbidities	Allergic rhinitis (4) Reactive airway disease (3) Atopic dermatitis (2) Anemia (2) Obesity (1) Seizure disorder (1) ADHD (1) OSA (1) GERD (1) Alpha thalassemia Trait (1)
Bleeding diathesis workup	Hematology workup : 4 Otolaryngologist workup : 1 All work-ups were negative and consisted of CBC, PT/aPTT, VWF assay and activity
Follow-up (Months)	Mean : 7.2 Median :13.1 Range : 75.1-0.63
Mucosal Defect Area :	Mean : 1.75cm ² Median : 1.5cm ² Range : 1-4cm ²
Skin Graft Area	Mean : 4.0cm ² Median : 3.6cm ² Range : 3-6cm ²

Results

- No patient required further intervention on side of MSD
- Immediate post-op complaints consisted mostly of crusting
- One patient has partial loss of skin graft at POD 11, this healed completely with conservative management
- One patient developed keloid at skin graft donor site
- Families of 5 of 6 patients were able to be reached for questionnaire.
- Two patients had 0 nosebleeds since procedure
- 5/5 families reported definite decreased nosebleed frequency
- No children required medical attention for a nosebleed after MSD procedure
- 5/5 Families reported being Very Satisfied with outcome
- 5/5 Families indicated that they would have undergone the procedure again
- 3/5 reported mild nasal dryness



Top left: Patient #3 right septal mucosa prior to excision. Note prominent vessels at Kiesselbach's plexus. Top right: Patient #3, left septal mucosa after methylene blue tattooing injections to outline area of hypervascularity. Bottom Left: Patient #4 left septum after securing skin graft with circumferential, interrupted 4-0 chromic sutures. Bottom right: Patient #4, left septum 6 weeks after MSD, graft showing good integration.

Conclusion

- MSD procedure is a powerful tool for the general and pediatric otolaryngologist in the treatment of pediatric epistaxis
- Study limitations included small sample size, recall bias during questionnaire, and inability to extend favorable to results in patients with bleeding diatheses
- MSD is designed for children in whom the origin of the bleeding and the required mucosal resection are limited to the prominent vessels within Little's area
- MSD criteria: 1) a history of cautery on at least four occasions in the past year, 2-3 occasions per year in each of the past two years, or 1-2 occasions per year for 3 consecutive years; 2) poor quality of life due to nosebleeds; and 3) a normal laboratory assessment for coagulopathy
- Degree of improvement in epistaxis frequency and severity allows the otolaryngologist to have a profound, positive impact on children and their families

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