ABSTRACT

Objective: To evaluate a technique for Closure of large Septal Perforation (SP) by Split-Thickness Skin Graft and Cartilage.

Methods: In this prospective study carried out from March 2000 to March 2005, 15 patients with large SP (≥ 2 cm²) underwent closure of SP with split thickness skin graft and cartilage.

Results: The most common symptoms were nasal obstruction (66.7%) and crusts (46.7%). In our technique, the success rate of closure was 86.7%. In two patients, closure was incomplete which was thought to be due their old age and long duration of SP.

Conclusions: Our technique is easy, with good exposure, high success rate and is low in cost. We recommend this technique for perforation ≥ 2 cm² (Rawal Med J 2008;33:176-178).

Keywords: Septal perforation, sub-mucosal resection, concheal cartilage, skin Graft.
surgery is the most common cause of SP, with rates of occurrence reported as high as 25% after submucous resection (SMR). While around 62 percent of patients with SP are asymptomatic, many suffer irritating symptoms, such as epistaxis, nasal obstruction, discharge, crusting, parosmia, neuralgia and whistling. Saline sprays and irrigations, antibiotic ointment and prosthetic buttons have been used as therapies with some success. Variety of techniques have been advocated depending on the size and site of the perforation and include external rhinoplasty, alarotomy, sublabial, midfacial degloving, and endoscopic procedures. Surgical procedures include septal rotation flaps, inferior turbinate flap, oral vestibular flap, sublabial mucosal flaps, nasolabial flaps, radial forearm free flaps, pericranial flaps, and tissue expansion. Several interposition grafts include temporal muscle fasia, septal cartilage, nasal turbinate, conchal cartilage, mastoid bone with periosteum, ear tragus cartilage with perichondrium, and ethmoid bone and iliac crest and acellular human dermal allograft. The aim of this study was to introduce a new technique with a high success rate in closure of large SP.

PATIENTS AND METHOD

In this prospective study, 15 patients underwent repair of a nasal SP. An anterior rhinoscopy was performed and nasal cavities were evaluated with attention to SP size and location. All patients had the history of previous septal surgery. Operation is performed under general anesthesia. with patient in supine position and head tilted up at 30 degree. Nasal septal mucosa was injected with one percent xylocaine in 1/100000 adrenaline around the perforation. The post auricular skin was similarly infiltrated to reduce bleeding. An island of composite conchal cartilage just larger than the size of perforation is harvested. The split thickness skin graft was taken from arm larger than perforation. For obtaining a reasonable and good exposure an alar-facial crease incision was made.
Elevation of the sub-mucoperichondrial and sub-periosteal flaps was continued around the perforation. Extensive inferior flap elevation was necessary. At this stage, cartilage was inserted between elevated flaps, and split thickness skin graft over it and scratched mucosa in side (figure 1). 3-0 vicryl sutures secured the cartilage and skin graft, and siliastic nasal splints were sutured in position, and mesh impregnated with tetracycline cream was inserted. After one-week, packs and in two weeks, stents were removed. Outcomes were assessed by comparison of preoperative symptoms and follow up assessment of SP size. The patients were followed up for 1 to 4 years.

RESULTS

Nine (60%) of the patients were male and 6 (40%) were female. The age range was from 22 to 63 years. The clinical symptoms at the first consultation were nasal obstruction in 66.7%, crusts in 46.7% and epistaxis in 33.3%. Previous septal surgery (SMR) was responsible for all of the cases of SP. The size of the defects varied between 2 and 3.5 cm. Complete closure
DISCUSSION

The use of variety of techniques is evidence that no single technique is currently recognized as being uniformly reliable in closing all perforations. Unilateral or bilateral septal rotation and transposition flaps and their modifications have been used and may be successful in small and median size perforations. In our patients, complete closure was achieved in 13 patients and incomplete healing in two patients. The causes of failure may be due to old age of patients (62, 63 years) and long duration of SP (25, 35 years). The main factors for perfect closure are proper patient selection, elevation of the mucoperiosteal and mucopericondrial flaps and care to preserve blood supply. In the technique we describe, extensive mobilization of mucoperichondrium is required in order to enable cartilage to be covered on inferior side of perforation by vascularized mucosa. But for complete coverage of cartilage and perforation on the other side, we took split-thickness skin graft from arm and inserted it over the cartilage and scratched mucosa.

We have found that split-thickness graft had a good chance of viability and taking over the scratched mucosa. Our technique with 3 layers (split- thickness skin graft- cartilage-perichondrium) was similar to normal structure of nasal septum. For wide and good exposure especially in inferior and posterior part of perforation alar-facial crease incision is excellent. Donor site morbidity is minimal, and sufficient cartilage can be harvested to close even the large perforation. In the present study, previous septal surgery was the cause in 100% of the cases. Therefore, prevention plays an important role in averting the development of SP which begins with techniques that include immediate intraoperative closure of any fenestrations, meticulous membrane elevation within the appropriate subperichondrial plane, and
reskeletonizing the septal membrane pocket with crushed septal cartilage. In conclusion, nasal SP closure by the concha cartilage and split thickness skin graft was easy, with good exposure, had wide field for working and a high success rate. We recommend this technique for perforation ≥ 2 cm² size.

REFERENCES


