Anterior septal deviations are those localized in the vestibular and valvular areas of the nose (Cottle’s areas II and III). These deviations, usually caused by trauma, produce a high degree of obstruction. Due to their location, anterior septal deviations produce valvular collapse. They also produce further deformities in the septum, including ipsilateral subluxation and posterior spurs (Fig. 1), which make its surgical management more complicated, and increase the risk of complications, such as septal perforation.

The major difference between the anterior septal deviations and the more common deviations in the turbinal area of the septum, are the difficulties in management and the predictability of the final result.

Another common mistake is to resect the caudal border of the septal cartilage to obtain a straight septum (5). This will, over time, cause collumellar retraction, and still leaves the problem of the subluxation and spurs in the posterior part of the septum.

Material and Methods

The authors have found that the following steps are necessary to secure good results in this surgery (Fig. 2).
The final result should look like Fig. 3.

4) Resection of deviation: Once exposed, a small strip is excised from the inferior border of the septal cartilage, separated from the vomer and removed. The articulation between septal cartilage and perpendicular plate of ethmoid (PPE) is also divided. This leaves the septal cartilage almost free of tension. The superior part of cartilage is mobilized towards the other side. The bony part of the deviation is now fully visible. The deviation is reset with ostotome or scissors, depending on the size of the deviation and the surgeon’s preference (Fig. 2E).

5) Verification of the valvular area. This frequently overlooked step is necessary to correct any deviation found in the nasal valve and the roof of the nose. These deviations are frequently found in two places:

- I) The union of the septal cartilage with the PPE: To correct this, it is necessary to reset the bony part of the articulation, and to free the posterior border of the septal cartilage so it can be moved back to the center. If this is still not possible, it is necessary to make a horizontal incision in the convex side of the cartilage, near the roof of the nose, in order to add flexibility and allow movement to the cartilage.

- II) The valvular area, where the most anterior part of the deviation was found. The cartilage was under less tension and is more difficult to mobilize. The superior part of the deviation is now fully visible. The deviation is reset with ostotome or scissors, depending on the size of the deviation and the surgeon’s preference (Fig. 2F).

6) If there is a large fenestration of the mucosa in the convex side of the deviation, it is better to close it with two or three sutures.

7) If a hypertrophic inferior turbinate in the concave side exists, this is a good time to make a partial turbinectomy. The better and longer lasting results are achieved by conservative resection of the excessive mucosa and bone.

8) Reversion of bony or cartilaginous fragments is recommended when large parts of the septum have been excised. The hemitransfixion is sutured with catgut 4/0. After all incisions are sutured, the septum is held with silastic splints (Fig. 2F). Vaseline or packing covered with antibiotic ointment is applied to both nasal cavities. If inferior turbinectomy was performed, it is necessary to compress the wound tissue to avoid bleeding. This packing is removed after two days.

The patient may be discharged from the hospital the same day of surgery, depending upon recovery. If the patient lives far from the hospital, it is better to wait five days to discharge, after the removal of the splints.

It is advisable to give the patient an explanatory leaflet about the surgery which include what he should, and what shouldn’t do, possible complications, and how to handle them.

The technique described above is very reliable in the management of area II complex deviations. The improvement in airway patency is dependent on the reconstruction of the superior part of the deviation and the nasal valve.

These are the most neglected areas in this surgery. In these areas, a small deviation can produce subjective and objective (rhinomanometric) obstruction, even if the rest of the septum is straight.

**Discussion**

Many authors agree in the technical difficulty to correct anterior septal deviations (1,3,6). Area II deviations were very difficult to handle before the advent of the maxilla-premaxilla approach described by Cottle. This technique allows the surgeon to have a complete view of the septum, thereby providing the ability to reconstruct it, rather than simply excising it. This approach is more popular in America than in Europe, where it is considered complicated and time-consuming. Submucous resection is still the preferred technique in Europe, even though it has more complications, and is unable to handle anterior deviations or complex deformities of the nose.

Submucous resection is indicated in some septal pathologies, particularly for inferior spurs due to subluxation. In these cases a classical Killian incision is enough to obtain an adequate exposure of the deviation. The maxilla-premaxilla approach is better suited for anterior deviations (area I and II) or complex deviations which require the complete exposure of the septum prior to its reconstructi- on. This technique can be easily mastered by the beginning surgeon if used frequently enough. The most important part of the surgery is finding the right plane of dissection and the authors want to emphasizes this. This plane is sometimes difficult to find, particularly in post-traumatic cases. Dissecting in this plane helps to avoid undesired fenestrations of the mucosa, and reduces the risk of a septal perforation. Also important is the repositioning of the fragments of cartilage and bone. This is important when extensive resection was made and we have large areas of both mucosa layers in direct contact. The fragments can be straightened with busters, with a bone crusher or with a morselizer. It is necessary not to replace all fragments, it is better to put the larger ones to give some rigidity to the septum and avoid the well-known complications of the lax septum.

**Conclusion**

A technique has been described to treat anterior septal deviations. This technique is easily reproducible and highly reliable. In this way, it is possible to restore the normal anatomy of the nasal valve allowing a good breathing function.

**Acknowledgments**

The authors would like to thank Prof. Josef Bavor from the Department of Anatomy of the Charles University, Faculty of Medicine in Hradec Králové, for his nice work in the illustrations.
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These are the most neglected areas in this surgery. In these areas, a small deviation can produce subjective and objective (rhinomanometric) obstruction, even if the rest of the septum is straight.

D) After cutting the cartilage proximal to the deviation, the superior part is moved to the other side to allow visualization of the deviation.

E) The bony part of the deviation is excised with an osteotome and the most prominent part of the deviation is dissected from the mucosa.

F) All remaining obstructive parts of the deviation are removed. The superior part of the cartilage is moved towards the center and fragments of cartilage or bone can be repositioned. Silastic splints are sutured to hold the mucosal flaps attached to the septum and act like a cast.

1) Right hemitransfixion incision and dissection of tunnel in concave side. We recommend to dissect first the convex side of the septum, because in this side the mucosa is under less tension and is more difficult to freestrate (Fig. 2A). It is usually easier to dissect the inferior tunnel on this side (Fig. 2B).

2) Dissection of anterior tunnel in convex side. This part of the surgery is very difficult and care must be taken not to perforate the mucosa on this side. In extremely large deviations, it is recommended to divide them, making a vertical cut in the angle formed by the anterior and posterior parts of the cartilaginous deviation. Care should be taken not to divide it completely to the roof, to avoid a difficult reconstruction. This will leave the anterior segment almost free, and will avoid complete displacement. An incision over all the chondromedi-

Fig. 2: A) Dissection of anterior tunnel on the concave side. B) Careful dissection of inferior tunnel on the concave side and connection with the anterior tunnel. C) Dissection of anterior tunnel on the convex side without dissecting the most prominent part of the deviation. D) After cutting the cartilage proximal to the deviation, the superior part is moved to the other side to allow visualization of the deviation. E) The bony part of the deviation is excised with an osteotome and the most prominent part of the deviation is dissected from the mucosa. F) All remaining obstructive parts of the deviation are removed. The superior part of the cartilage is moved towards the center and fragments of cartilage or bone can be repositioned. Silastic splints are sutured to hold the mucosal flaps attached to the septum and act like a cast.

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ne articulation will make the dissection easier. Under good visualization, the posterior part of the deviation is gently separated from the mucosa, towards the concave side (Fig. 2C).

3) Dissection of inferior tunnel of the convex side: The best approach is through the exposure of the nasal spine, and the separation of the mucosa from the bony part of the spur. Sometimes, however, this part lies low over the floor of the nose, or there is excessive tension on the mucosa. In these cases, we cut the most prominent part of the spur or the complete bony deviation with an osteotome (2 mm osteotome). This reduces the tension in the area, and makes it easier to separate the fragment from the mucosal flap and to continue the dissection of the inferior tunnel (Fig. 2D).

4) Resection of deviation: Once exposed, a small strip is excised from the inferior border of the septal cartilage, separated from the vomer and removed. The articulation between septal cartilage and perpendicular plate of ethmoids (PPE) is also divided. This leaves the septal cartilage almost free of tension. The superior part of cartilage is mobilized towards the other side. The bony part of the deviation is now fully visible. The deviation is resected with osteotome or scissors, depending on the size of the deviation and the surgeon’s preference (Fig. 2E).

5) Verification of the valvular area patency: This frequently overlooked step is necessary to correct any deviation found in the nasal valve and the roof of the nose. These deviations are frequently found in two places:

• I) The union of the septal cartilage with the PPE. To correct this, it is necessary to resect the bony part of the articulation, and to free the posterior border of the septal cartilage so it can be moved back to the center. If this is still not possible, is necessary to make a horizontal incision in the convex side of the cartilage, near the roof of the nose, in order to add flexibility and allow movement to the cartilage.

• II) The valvular area, where the most anterior part of the deviation was found. This should be the last portion to be modified, because it is necessary to suture the inferior part of the septum to the nasal spine, in order to avoid the complete displacement of the caudal part of the septum. Once the inferior portion of the septum is sutured, it is possible to resect and reconfigure the remaining superior deviation. Commonly, it is necessary to modify the nasal valve. If this is the case, the septum should be separated from the upper lateral cartilage and the nasal valve trimmed as in a valvuloplasty. A spreader graft can be used as a batten to straighten this area and open the nasal valve.

• The final result should look like Fig. 3.
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Acknowledgements
The origin of hematology as a specialty at the Faculty Hospital in Hradec Kralove goes hand in hand with the establishment of the Department of Internal Medicine at the newly founded Faculty of Medicine. According to the repeatedly declared and broadly accepted concept of the International Society of Hematology, the specialty of hematology comprises two integral, closely interconnected and mutually indivisible components, i.e. clinical and laboratory hematology. It was in accord with these principles that the specialty of hematology was being formed at the Faculty Hospital. When I was approached by the editors of Acta Medica (Hradec Kralove) to capture the historical milestones of hematology at the Faculty Hospital in an article, I realized first of all, how demanding this task would be, at the same time I understood I am the only witness of the development of hematology nearly from 1945 till present, which makes it relatively easier for me, compared to my colleagues, to undertake this task. The resulting article originated thanks to active contributions of hematologists from the Department of Clinical Hematology and the Second Department of Internal Medicine who were active participants in the development of hematology. I am sincerely grateful for all their help. I would like to particularly mention efforts of my co-author Milan Bláha, M.D., Ph.D., Professor of Medicine.

HISTORY OF HEMATOLOGY AT THE CHARLES UNIVERSITY, FACULTY OF MEDICINE AND FACULTY HOSPITAL IN HRADEC KRALOVĚ

Ladislav Chrobák, Milan Bláha

Introduction
The following time periods and milestones in the history of hematology at the Faculty Hospital can be distinguished:
1945 - 1955 Department of Internal Medicine with a Laboratory of Hematology
1955 - 1971 Division of originally unified Department of Internal Medicine into First and Second Departments of Internal Medicine
1956 - 1997 Foundation of the Central Laboratory of Hematology located in the building of the First Department of Internal Medicine
1971 Establishment of the Department of Clinical Hematology located at the First Department of Internal Medicine with beds for hematological patients as a part of the First Department of Internal Medicine
1978/79 Foundation of the Unit of Hematological Intensive Care at the Second Department of Internal Medicine
1994/IX Transfer of the laboratory and outpatient clinic of the Department of Clinical Hematology from the building of the First Department of Internal Medicine into the newly constructed laboratory building with beds for hematological patients still remaining at the First Department of Internal Medicine
1997/X Foundation of the new Department of Clinical Hematology with beds for hematological patients in the new Oncology building and joining in this department hematologists from the Department of Clinical Hematology and the Second Department of Internal Medicine
Hematology certainly belongs among the well established and prominent specialties at the Faculty Hospital, and it has become a prominent center on a national level. Hematology began emerging as an independent field at the end of the 19th century, and at the beginning of this century in step with the progress in laboratory diagnosis, which finally made it possible to diagnose the diseases of the blood.