

# **Treatment of orbital blow-out fractures: endoscopic repair versus traditional surgery**

## **Abstract**

In the last decades, diagnostical imaging, surgical techniques, alloplastic materials, and surgical instruments development, allowed a great progress in management of orbital fractures. The aim of the present study was to evaluate the benefits of endoscopic repair of orbital blow-out fractures of the floor and of the medial wall. Therefore we compared the endoscopic surgical treatment and the traditional external surgical treatment to the orbit, using objective criteria. This study included 30 patients treated from April 2011 and December 2013, 15 with orbital blow-out floor fracture (Group 1) and 15 with orbital medial wall fracture (Group 2), for each group there was a control group treated with surgical traditional approach. For Group 1 seven patients were treated with endoscopic intranasal approach and eight patients were treated with external cutaneous incision to the medial orbital wall. For Group 2 eight patients were treated with endoscopic assisted transconjunctival approach and seven patients with transconjunctival approach to the orbital floor. Physical examination, included an Hess Lancaster scheme and an Hertel exophthalmometer exam; CT scans were done pre and post surgery for each patient. The follow up period was of 12 months and included a CT scan control after six months post surgery, an endoscopic intranasal control at one, three, six and twelve months after

surgery, an Hess Lancaster scheme and an Hertel exophthalmometer exam at one, three and six months after surgery. To evaluate and compare the two approaches were used, for all patients, the following parameters: reduction rate of the herniated orbital tissue, enophthalmos, operation time, hospital stay, postoperative complications.

One case in the endoscopic endonasal reduction group had a more than 2 mm enophthalmos after surgery. Among patients with medial orbital wall fracture, the average reduction rate of the herniated orbital tissue was of 90% for the endoscopic endonasal reduction group and 92% for the traditional approach reduction group. Among patients with orbital floor fracture, the average reduction rate was of 87% for the transconjunctival endoscopic assisted reduction group and 86% for the transconjunctival approach reduction group.

None of the above differences were statistically significant. However, among the patients that were treated with an endoscopic reduction the average hospital stay and the presence of postoperative complications were lower than in patients treated with the traditional approach, the difference was statistically significant.

Among patients treated with endoscopic approach the average operation time was significantly greater than in patients treated with traditional approach, the difference was statistically significant.

The two surgical methods seems to have a similar effectiveness; however endoscopic approach seems to be more advantageous with respect of the length of hospital stay and the postoperative complications.