A SEMI-SITTING position leads to the same outcome as prone positioning among patients who undergo repair of small macular holes, according to new research from France. The finding adds fuel to the debate over the importance and role of face-down positioning following macular hole surgery.

Alexandre Guillaubey, Dijon University Hospital, France, presented the results of a prospective randomised trial at the annual conference of ARVO. The study compared the post-surgical anatomic and functional results among 104 eyes in patients who underwent macular hole repair. Patients were randomised either to maintain a semi-seated position for 10 hours per day for five days, or to stay in a prone position for 10 hours per day for five days.

About a decade ago, ophthalmologists routinely advised patients to maintain a face-down position for 10 to 15 days after repair of a macular hole. Mr Guillaubey told EuroTimes in an interview. Now, patients are often asked to stay face-down for anywhere from three to seven days, but there is still some debate over how long is most appropriate.

All the patients in his study underwent OCT prior to surgery as well as three months after surgery to measure the diameter and condition of the macular holes. The gas used in the surgery consisted of a nonexpanding mixture of air and SF6 in patients with macular holes less than 500 um. For holes larger than 500 microns, a mixture of air and C2F6 was used. Patients who had macular holes with a diameter of larger than 800 microns or caused by trauma were excluded from the study. Patients underwent follow-up a minimum of three months post surgery.

Surgical treatment included vitrectomy, and peeling of the internal limiting membrane without dye. In the semi-seated group, macular holes closed in 45 of 50 eyes by one month. In the face-down group, closure occurred in 52 of 54 eyes. Among patients who had macular holes smaller than 500 microns, holes successfully closed in 30 of 32 eyes in patients using the semi-seated position compared to 37 of 38 eyes where the prone position was used. The differences between the groups were not statistically significant.

Visual acuity improved in both groups by a median of 1 to 0.52 logMAR, but again, there was no statistical significance between the two groups.

“The position after macular hole surgery does not seem to have a strong influence on the outcome of surgery, especially for small sized macular holes,” Guillaubey said. But, he added that a larger clinical trial with longer follow-up is needed to confirm the results, which he described as preliminary.

However, he said that the results were encouraging. Less face-down positioning would lead to less inconvenience for the patient, he said.

Type of gas makes a difference

The trend, at least in North American clinics, is to have patients in the prone position for at least three days. But, the length of time for positioning is often related to the type of gas mixture used, according to Peter Kertes MD, FRCS(C), associate professor of ophthalmology at the University of Toronto.

“In the beginning I think all of us told our patients to stay face down for two weeks. I think most of us have backed off from that. There are two issues, one is face-down positioning and the other is the type of gas that is used,” he told EuroTimes.

The SF6 gas used by the French researchers lasts for about two months. The C2F6 gas used by the French researchers is not commonly used in North America.

“If you're going to have a gas that's going to disappear quickly, the positioning (if you want the bubble to push on the macular hole) is more important. If you have a gas that sticks around longer and fills the eye better you would expect that this gas bubble will still push down on the hole even if the patient isn't strictly in a face-down position,” he said.

His impression is that many North American ophthalmologists will use positioning of the shorter duration of about three days or so along with the short-lasting gas. As well, with recent advances in surgical techniques, such as internal limiting membrane peel, surgical success rates have improved, making face-down posturing less critical.

As for how positioning might affect healing of large compared to small macular holes, more studies need to be done.

“I don't think anybody has studied that in a rigorous or comprehensive way,” Dr Kertes said.