Advances in phaco technology continue to shift the goalposts in cataract surgery

What patients want

In France there are currently 5,504 ophthalmologists, and of those, 85 per cent are in private practice. However, competition among cataract surgeons in private in France is very difficult, because the country does not have a referral system and it is not legal to advertise or market ophthalmic services. The remuneration for surgeons in private practice who are still developing their reputation can also be fairly poor, Dr Crozafon said.

“The surgeon’s fee is €271.50 out of the €1250.00 paid by the state to cover every cost. That is the price of an iPhone with a one-year warranty. But some doctors are allowed to charge more,” he said.

To earn more in private practice, a surgeon must not only provide better surgery, but must also convince patients that he does. It can therefore be helpful to find out what patients are looking for in a cataract surgeon and how they go about finding it. To that end, Dr Crozafon conducted a survey of 100 patients who had just undergone cataract surgery by one of five different surgeons.

When asked how they chose their surgeon, 36 patients said they were referred by their general practitioner and the same number said word of mouth was the deciding factor. As for the remaining 28 patients, 19 said they based their choice on the advice of their “concierge, coiffeur or optician”, while nine said they had either used the yellow pages or else “didn’t know” how they chose their surgeon.

When asked what they were looking for in a surgeon only a third said quality of surgery. Moreover, only five used the Alcon Kelman Legacy with “free flow infusion”, a system that allowed for continuous vacuum and aspiration. A few years later he was using the Alcon Kelman Master, which he found to be more comfortable, safety and speed of the procedure were important criteria. In fact, psychological factors had nearly as great a bearing on a patient’s assessment of their surgeon as the quality of their surgery, with 29 rating trust and 24 citing a good relationship as something they looked for in their surgical experience.

Regarding what inspired their trust in their surgeon, the patients in the survey again rated psychological factors very highly. Over a third said the friendliness and cordiality of the surgeon was important, whereas only nine said that the apparent skill or competence was a factor. On the other hand, a high proportion rated emotionality and professional qualifications as important in gaining their trust, with 45 patients citing “positive word of mouth” and 72 agreeing that ISO certification would be a good sign of quality.

ISO certification’s benefits vs. costs

The benefits of ISO certification have to be weighed against the considerable time and expense required to obtain and maintain it. Dr Crozafon noted. A surgeon must perform and record their performance precisely according to ISO standards for two years and pay a fee of €5,000. Moreover, they must renew their certification every year for an additional €5,000, he pointed out.

Maintaining ISO standardisation also requires much more paperwork than might otherwise be necessary. For each patient, surgeons must record a broad range of parameters, including the examinations performed, the biometry calculations, the procedures used to prevent IOL power and laterality errors and the operative reports with lot numbers.

“I do my cataract surgery in less than 10 minutes but then I spend 20 minutes on the computer doing paperwork,” Dr Crozafon remarked.

As regards the benefits, ISO certification can bring an improved standard of care with lower insurance premiums and greater protection against litigation. And while it may not increase the volume of a surgeon’s practice, it does increase the proportion of patients who seek them out because they were dissatisfied by their previous surgeon’s less exacting standards.

“We don’t have more patients, but we have more second eye patients who finally find it acceptable to pay more for quality and safety,” he added.

Best practice a moving target

The continual advances in phacoemulsification technology in recent decades have required cataract surgeons to continually retrain and retool.

Dr Crozafon noted that his first phacoemulsification machine was the Kelman Cavitron 8000 with magnetostreptic hand pieces. Within a year he moved on to the Coopervision Kelman 9001 with piezoelectric hand pieces and then to the Coopervision Kelman Master, which enabled surgeons to choose different settings for vacuum and aspiration. A few years later he was using the NovaSonic hand piece with “free flow infusion”, a system that allowed for continuous updates and improvements.

More recently Dr Crozafon has been using Alcon’s Infiniti phacoemulsification system, which provides surgeons with the choice of three modes of cataract removal, torsional phacoemulsification options (O Zil), sonic and ultrasound with the NeoSonix hand piece and AquaLase liquefication. The system also has an advanced fluid management system that is highly adaptable to a wide range of surgical styles.

Dr Crozafon said that he now uses AquaLase for cataracts grade one to grade three, and O Zil for harder cataracts. The AquaLase system dissolves cataracts through liquefication, whereby lens material is delaminated through the application of...
short high-pressure pulses of surgical fluid. It has two modes of operation, dispersive mode, for liquefaction in front of the tip, for soft cataracts and for sculpting and polishing, and occlusive mode, for denser cataracts.

**Safety advantages**

The advantages of AquaLase are that it is completely non-thermal and therefore does not entail any risk of thermal injury to the incision site. In addition, because the AquaLase tip is made of a smooth polymer rather than metal, it can clean the posterior capsule more safely and more completely. It therefore provides the possibility of reducing the rate of posterior capsule opacification.

“Cleaning of the capsular bag with AquaLase allows more extensive elimination of cortical and equatorial cells than a classical polishing of the capsule.”

Furthermore, AquaLase technology now has a 1.1mm phaco tip which makes it amenable to use in 2.2mm microcoaxial procedures. The new tip, which is available in bent or straight models, also allows greater aspiration and is safer and more efficient than earlier designs.

Dr Crozafon noted that he uses AquaLase liquefaction in most cases where he is able to perform pre-chopping. He added that, in his opinion, pre-chopping is a neglected technique, being used by less than one per cent of French cataract surgeons. He suggested that more surgeons would adopt the technique if they had a better idea how to perform it.

Dr Crozafon emphasised that prior to pre-chopping it is essential to perform a complete peripheral hydrodissection and bimanual rotation of the nucleus. The chopping should be carried out in a cautious and careful manner completely pre-chopping the nucleus into four quadrants. Once each quadrant is free, the surgeon should use liquefaction to sculpt, keeping the tip directed downward to favour aspiration and aiming for constant occlusion.

In cases of harder cataracts, where pre-chopping is not possible, Dr Crozafon uses the ultrasound OZil modality of the Infiniti system. Because of the OZil tip’s rotational rather than longitudinal motion, it does not repel nuclear fragments as in conventional phacoemulsification. In addition, as with AquaLase, the torsional phaco tip virtually eliminates the risk of wound burn.

The Infiniti’s fluid management system responds rapidly and precisely to changes in vacuum by altering the speed and direction of flow. As a result, it helps maintain good anterior stability with reduced turbulence, thereby improving the safety and efficiency of the procedure. Further improvements to the system’s fluidic management and ultrasound delivery are expected in the near future, including “Intelligent Phaco” (OZil® IP).

“Some people complain that at the end of phacoemulsification with OZil the hand piece becomes clogged. But when OZil IP detects occlusion at a maximum vacuum setting, it delivers seven milliseconds of longitudinal phaco with a power equal to the OZil amplitude, releasing the occlusion and restoring the aspiration and flow,” he added.

crozafonphilippe@wanadoo.fr