Neurocirugía
2008 19: 507-508

Editorial

Comments to Esparza et al's article "Surgical treatment of isolated and syndromic craniosynostosis. Results and complications in 283 consecutive cases"

There exists the widespread concept that most pediatric neurosurgical practice consists merely of extracranial surgery meaning that pediatric neurosurgeons deal almost exclusively with hydrocephalus-valves and myelomeningoceles. Probably, the surgical procedures utilized in correcting cranial vault and base craniosynostosis represent a formidable challenge than only surgeons dedicated to pediatric neurosurgery can appreciate. Surgery for craniosynostosis is usually performed in very young children (normally around age 6-month), who have a very small circulating blood volume and a fragile nature that render them more prone to surgical complications.

The craniofacial surgeon must have not only a sound scientific knowledge on the developmental nature of the babies' brain, as happens in the craniosynostoses, but he/she must also become trained in the numerous surgical techniques that can be used for their treatment. He/she must also develop an artist's mind, as a sculptor, for modeling the misshapen heads of these children. On performing the surgery, the craniofacial surgeon must also bear in mind the possible and feared complications that may arise during the surgery and along the patients' evolution aimed at preventing them. There are many early and late complications in this type of surgery that a careful and exquisite surgical technique can prevent. Last, the craniofacial neurosurgeon must be prepared for dealing with the babies' parents, what we know may constitute a rather difficult task. I remember the case of a baby's father requesting photographs of our operated patients to see their cosmetic results before giving the consent for his son's operation.

Dr. Esparza et al.'s paper deals with a large series of patients diagnosed with the diverse forms of craniosynostosis (isolated and syndromic) who were treated during a 9-year span at their Cranio-Facial Unit. This series constitutes only a part of their practice that started in 1989. The study comprises 283 children treated from 1999 to 2007. The authors report their cosmetic and functional results together with their complications' rate. On reading the article, one can appreciate the difficulties of the complicated procedures that this team has performed. In spite of the high number of complex cases, as are multi-suture synostosis and cranio-facial syndromes, they report a very low mortality rate (0.7%), similar to that of previous large reported series[2-4]. This figure refers to two cases of late brain herniation that resulted in the children's death (one of fulminant meningitis and the other of tracheotomy-related respiratory tract infections). We reported a case and reviewed the literature concerning iatrogenic growing skull fracture occurring after craniosynostosis repair[1].

The authors also raise the interesting issue of postoperative hyperthermia of undetermined origin that was a frequent complication (13.43%) in their series. A probable explanation for this occurrence could be the reabsorption of blood by-products. Some authors consider that pyrexia is part of the physiological response to craniofacial surgery[5]. The authors also report a high rate of minor complications as are subgaleal blood collections, infected hematomas and empyema. We rarely see these complications perhaps because we routinely use a subgaleal drain for 48-hours. Dural tears of unavoidable occurrence presented in a few procedures and were treated by immediate suturing. Esparza et al. have not experienced sagittal sinus rupture as we have in one early case of our series. However, they warn the novice neurosurgeon about the risks of posterior fossa procedures that can occur due to frequent anomalies in the venous drainage that are seen in complex cases.

Endoscopic treatment and distracting techniques constitute new advances in the correction of craniosynostosis that Esparza et al. are already using. The indications and pitfalls of these new acquisitions are also dealt with honestly. Their account of complications and results are clearly explained. Their rate of complications and their surgical results are comparable to those of most contemporary neurosurgical series of craniosynostosis[2-4].

Perhaps the strongest piece of information of Esparza et al's paper is the discussion on the indications of the diverse techniques. They address the pros and cons of the multiplicity of surgical procedures that one can choose for treating these craniofacial malformations. These recommendations will undoubtedly constitute a main reference point for all

Recibido: 18-11-08

Neurocirugía
2008; 19: 507-508

pediatric neurosurgeons that perform reconstructive skull procedures in our country. In my opinion, the majority of pediatric neurosurgeons are capable of treating the most frequent forms of craniosynostosis. In this regard, our policy consists of performing simpler procedures as they usually are safer and less risky. However, we think that uncommon and difficult-to-treat cases should be transferred to centers that, because of their dedication, possess a larger experience and have all the human and material resources to treat those patients in the most excellent way. To end, the present review produced by Dr. Esparza et al. on the management of children with craniosynostosis will certainly constitute a main reference work for pediatric neurosurgeons for which they should be congratulated.

J.F. Martínez-Lage
Murcia

References

1. Martínez-Lage, J.F., López, F., Piqueras, C., Poza, M.: Iatrogenic intradiploic meningo-encephalocele. J Neurosurg 1997; 87: 468-471.

2. McCarthy, J.G., Glasberg, S.B., Cutting, C.B., Epstein, F.J., Grayson, B.H., Ruff, G., et al.: Twenty-year experience with early surgery for craniosynostosis: I. Isolated craniofacial synostosis --results and unsolved problems. Plast Reconstr Surg 1995; 96: 272-283.

3. Renier, D., Lajaunie, E., Arnaud, E., Marchac, D.: Management of craniosynostoses. Childs Nerv Syst 2000; 16: 645-658.

4. Sloan, G.M., Wells, K.C., Raffel, C., McComb, J.G.: Surgical treatment of craniosynostosis: outcome analysis of 250 patients. Pediatrics 1997; 100: E2: 1-9.

5. Takagi, S., Andenson, P.J., David, D.J.: Pyrexia after transcranial surgery. J Craniofac Surg 2006; 17: 202-204.