



"Nuestros niños, nuestros pacientes, nuestra razón de ser"

## TÍTULO:

### **Aesthetic Outcomes after Craniosynostosis Surgery: What We See and What We Measure**

## INTRODUCCIÓN/OBJETIVOS:

Aesthetic correction remains the primary surgical indication in most cases of nonsyndromic single-suture craniosynostosis. However, aesthetic outcomes are often assessed subjectively, with unknown correlation to objective cranial remodeling. This study compares subjective and objective postoperative aesthetic outcomes following open and endoscopic surgery for craniosynostosis.

## MATERIAL Y MÉTODOS:

A retrospective analysis was conducted on pediatric patients surgically treated for craniosynostosis between March 2022 and March 2025 at a single surgical center. Subjective aesthetic outcomes were evaluated using a 5-point Likert scale by the same pediatric neurosurgeon. Objective morphometric data were collected in the endoscopic group using photogrammetry (cephalic index, skull asymmetry, and radial symmetry index). Subgroup analysis was performed according to the involved suture.

## RESULTADOS:

Twenty-one patients were included, with a mean age of 6 months at surgery.

Subjective aesthetic outcomes were similarly high in both groups (mean Likert score  $4.08 \pm 0.67$  in the open group and  $4.13 \pm 0.53$  in the endoscopic group,  $p=0.456$ ). Subgroup analysis showed comparable results for sagittal and metopic synostosis, but lower scores for endoscopic repair of coronal synostosis ( $p = 0.023$ ).

Objective photogrammetric analysis in the endoscopic group demonstrated overall postoperative improvements in cephalic index, skull asymmetry (from 4.2 mm to 2.9 mm), and radial symmetry index (from 24.5 to 16.8). However, no objective improvement was observed in the single case of coronal synostosis treated endoscopically, which ultimately required surgical revision. A trend toward correlation between subjective and objective improvement was noted, though no clear linear relationship was established.

## CONCLUSIONES:

Aesthetic outcomes were globally favorable and comparable between open and endoscopic approaches. These findings reinforce the importance of combining subjective and objective evaluation tools to support more nuanced and individualized decision-making in craniosynostosis repair.