Grading system for cranial suture closure in craniosynostosis

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Background: Craniosynostosis is the premature closure of calvarial sutures. Nearly affect 0.4 of 1000 persons. There is a chance of increased intracranial pressure with one suture synostosis and the risk increased when multiple suture is involved. So early diagnosis is crucial to help in early management to avoid expected secondary neural insult.

Aim: to get an early and precise method for diagnosis of craniosynostosis and so early and rapid treatment with prevention of secondary neural insult.

Methodology: This is a retrospective study of 3D CT volume rendering technique of thirty patients, diagnosed as non-syndromic primary craniosynostosis Ectocranial skull suture closure grading system applied to 3D skull volume rendering technique of the studied group as it stimulate real time one. By this mean together with other clinical evidence early and precise diagnosis of craniosynostosis can be elicited.

Results: The studied group are 30 patients were operated by early suture release surgery endoscopic assisted suturectomy in neurosurgery department in Shebin Elkom Teaching hospital (2011-2016). 16 females 14 males all have primary craniosynostosis. 9 Brachycephaly,7 scaphocephally,4 anterior plagiocephaly,4 trigonocephaly,2 posterior plagiocephaly and 4 oxycephaly. Of all patients 38 sutures was affected. After application of proposed grading 10 sutures G1, 16 sutures G2 and 12 sutures G3.

Conclusion: Application of ectocranial skull suture closure grading system to 3D skull in early cases of primary craniosynostosis will help in precise diagnosis and surgical decision, as it demonstrate the degree of affected suture from single bony bridge that restrict or arrest suture growth in mild cases to completely obliterated one.

Speaker Biography

Ramadan Galal Kamal Shamseldien, Neurosurgery MD. Lecturer of neurosurgery, Shebin Elkom Teaching Hospital, Egypt. He is a member of Egyptian Society of Neurological Surgeons (ESNS), Egyptian Spine Association (ESA), and Middle East Spine Society (MESS). He was born on 1977 in Egypt. He was graduated from Faculty of Medicine, Alazhar University in 2001. He underwent neurosurgery residency training in Mansoura international Hospital. He has completed his MD neurosurgery at Alazhar University, Egypt in 2013. He is well trained to perform all the standard brain, spinal, and peripheral nerve surgeries with special interest in pediatric surgery and spinal fixation. He published numerous national and international papers concerning Metastatic brain tumors, Endoscopic suturectomy, Posterior craniocervical fixation, Spontaneous ICH (STICH II study), and Grading system for cranial suture closure.

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