

Patient information sheet – Bicoronal craniosynostosis

What is Bicoronal craniosynostosis?

It is a condition where two of the soft joints of the skull (Coronals – Right and left) on the sides of the forehead fuse earlier than usual resulting in a flat head (Brachycephaly).

How does it affect my child?

It results in an abnormal shaped head (Flat head). In very rare circumstances, it can compress the brain to increase the intracranial pressure.

How is it diagnosed?

Your Craniofacial surgeon will perform a thorough clinical examination. After that, a Skull Xray and a 3D CT scan of head is usually required. Occasionally, your child also might need a MRI to assess the brain.

How is it treated?

The treatment of this condition requires surgery by a multidisciplinary approach mainly involving the Craniofacial surgeon, Neurosurgeon. The type of surgery is based upon the age. If your child is below 6 months of age, we will be able to do Minimally invasive, Endoscope assisted keyhole surgery to excise the fused suture followed by Helmet therapy for 1-2 years. Sakra World Hospital is a pioneer in this and one of the very few hospitals in India who offer this service. If your child is above 6 months of age, an open procedure called Fronto orbital advancement remodeling is done to reshape the forehead.

What can I expect with the keyhole skull expansion surgery?

Your child will be properly assessed before surgery by a paediatric neuro anaesthetist. An eye check will also be performed. Your child will be admitted on the day of surgery. The surgery takes 1-2 hours and is done under general anaesthesia. Because it involves just a small cut in the scalp, there are no major scars, no major blood loss. Your child will stay in the ICU overnight. Your child may require blood transfusion occasionally. The pain will be controlled very well in the ICU by our critical care specialists. We encourage normal feeding during the recovery period. Your child will be shifted to the normal ward the next day. You can expect to be discharged from the hospital after removal of the head dressing on the 3rd day usually. You will be able to give normal head shower to the baby after that.

What happens after discharge?

After a post operative check at 1 week, Helmet therapy is usually commenced with our Orthotic partners (KARE or Osteo3D). This will continue for 1-2 years until a nice head shape is achieved. We might have to change the helmet once or twice depending upon the progress. You will meet the Craniofacial surgeon and Neurosurgeon in regular intervals for monitoring.

What can I expect with the open Fronto orbital advancement surgery?

After a pre operative assessment by a paediatric neuroanaesthetist and ophthalmologist, your child will be admitted on the day of surgery. The surgery is done under general anaesthesia and usually takes 4-5 hours. Your child might have a lot of tubes connected for monitoring like central line and arterial line.

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Almost all the children need a blood transfusion during and after the surgery. There will be a cut made from one ear to the other to gain access to the skull. The neurosurgeon protects the brain, while the craniofacial surgeon does reshaping of the forehead bones. Bones are usually fixed with Stainless steel wires or stitches. Rarely, absorbable plates and screws also may be used. The wound will be closed with absorbable stitches. There will be a head bandage. Your child will spend the first night in the ICU and subsequently be shifted to the ward. You will notice significant swelling of the head and face and the eyes may close over for 3-4 days. The swelling gradually reduces over the week. Your child will be discharged usually on the 6th or the 7th day after removal of head bandage. You will be able to give head shower to the baby after that.

What happens after discharge?

You will have follow up visits with the craniofacial surgeon and neurosurgeon periodically. This is usually a one time procedure, and if there is no associated syndrome, that's all your child will ever need. There is no need for Helmet therapy after open remodeling procedure. You will notice some gaps in the skull which will close over in 2-3 years time. The scar also is usually well hidden in the hair.

What complications can I expect?

This is a major surgery and you need to be well informed about all complications. Infection, bleeding, scar, swelling and pain are common complications that can happen. All these can be managed by our well trained team easily. Minor tears in the covering of the brain is sometimes seen which is usually repaired during the surgery. Very rarely there might be injury to the eye or the brain. Death is also a remote theoretical possibility, but we have never seen one in our practice.

I have a few more questions. What do I do?

Kindly write to us at contact@drvvybhavderaje.com. We will be happy to reply to any of your questions and concerns.

Disclaimer: This information sheet is for you to get a general idea about the condition and surgery. This is in no way a substitute for a formal consultation with your doctor.