

Etiology, Clinical Picture, Diagnosis and Treatment Methods of Cephalohematomas in Newborns

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Abstract: In the department of neurosurgery of the multidisciplinary clinic of Samarkand State Medical University, 60 babies treated with cephalohematoma disease, clinical course, diagnostic and treatment features were studied. Occurrence of cephalohematomas can be caused by extragenital diseases of a pregnant mother, stress during childbirth, continuous exertion, use of vacuum extractor, caesarean section. Clinical and neurological examinations did not reveal general brain and focal symptoms in infants, neurosonography, craniography and multispiral computer tomography of the brain were used to diagnose them. For the purpose of treatment, the liquefied hematoma under the periosteum was evacuated with the help of a medical syringe, and the thickened hematoma was cut through the skin, and in ossified cases, the ossified layer of the cephalohematoma was cut and removed using bone scissors.

The relevance of the problem. Cephalohematomas are one of the urgent problems of modern medicine, including neurosurgery, obstetrics-gynecology and neonatology. Although pregnancy and childbirth are considered a normal physiological process, various complications are observed during these stages. Among the complications, various birth traumas, including cephalohematomas, are observed in many cases and can have a significant impact on the mental and physical development of babies [1, 2, 7]. According to scientific articles published in recent years, the incidence of cephalohematomas among babies is 1-4% [1, 2, 3, 9].

Cephalohematomas are characterized by bleeding and accumulation of various volumes of blood under the bone membrane, mostly in the top and neck areas of babies. The mechanism of occurrence of cephalohematomas is still unclear. According to the results of further scientific studies, their occurrence is caused by complicated births, prolongation of the process of strengthening in a woman, use of vacuum-extractor, caesarean section operation during the birth of the fetus, umbilical cord wrapping around the neck [1, 2, 8, 10, 11].

However, it is worth noting that cephalohematomas are also found during normal childbirth [3, 5]. In recent years, there is information that the widespread use of epidural analgesia for analgesia during childbirth is related to the formation of cephalohematomas [4, 5, 6, 9].

The above-mentioned information means that it is necessary to continue scientific research on the causes of cephalohematoma disease, clinical picture, early diagnosis and improving the quality of treatment.

Purpose of the study Anamnesis of pregnancy and childbirth of mothers whose children were born with cephalohematoma, analysis of the course of the disease in babies with cephalohematoma, diagnosis and treatment methods.

Material and inspection methods. The anamnesis of the mothers of 60 babies born to the Department of Neurosurgery of the Multidisciplinary Clinic of Samarkand State Medical

University in the maternity hospitals of Samarkand city, Samarkand region and districts of neighboring regions and treated with the diagnosis of cephalohematoma in 2020-2023, clinical and neurological features of cephalohematoma in babies, neurosonography, echo-encephalography, brain multispiral computed tomography examinations performed according to the instructions, and the results of disease treatment methods were studied.

The obtained results and their analysis. When the babies underwent clinical and neurological examinations, no changes related to damage to their central nervous system - general brain, focal, meningeal symptoms, problems related to innervation of cranial nerves were detected. Local examination revealed one, sometimes two-sided swelling in the occipital region of the head, a certain degree of tension on palpation, sometimes a fluctuation under the skin.

When the anamnesis of 60 mothers related to pregnancy and childbirth was collected, 36 of them (60.0%) had extragenital diseases, 29 (48.33%) had cardiovascular diseases: vegeto-vascular dystonia - 16 (26.67%), mitral valve insufficiency - 3 (5.0%), anemia - 4 (6.66%), thrombocytopenia - 6 (10.0%) and chronic pyelonephritis - 7 (11.67%) were found. Epidural analgesia was applied to 16 of 60 pregnant mothers (26.67%) during childbirth, and surgical operations were performed on 15 (25.0): vacuum extraction in the Kiwi apparatus - 8 (13.34%), immediate cesarean section - 3 (5.0%), 4 (6.66%) elective cesarean sections were performed (Table 1).

Observational rate of cephalohematomas related to extragenital diseases and surgical operations used during childbirth in the mothers of babies

Table 1

Extragenital diseases and surgical methods used in childbirth	Number of newborn with cephalohematoma
Vegito-vascular dystonias	16 (26.67%)
Mitral valve insufficiency	3 (5.0%)
Anemia disease	4 (6.66%)
Thrombocytopenia	6 (10.0%)
Chronic pyelonephritis	7 (11.67%)
Epidural analgesia	16 (26.67%)
Vacuum-extract in kiwi apparatus	8 (13.34%)
Immediate caesarean section	3 (5.0%)
Planned caesarean section	4 (6.66%)

60 children under our control were diagnosed with "cephalohematoma" on the second day after birth, 41 (68.33%) of them had the first degree of hemorrhage under the periosteum (the size of the cephalohematoma was up to 4 cm), 19 (31.67%) had the second degree of hemorrhage. (the size of the cephalohematoma is 5-6 cm) was calculated.

According to the localization of cephalohematomas, most of them were located in the top - 37 (61.66%) and nape - 23 (38.34%) areas of the head. All babies were born on time (Apgar scale 7-8 points) and were sent home in a satisfactory condition on the 5th day.

Neurosonography, echo-encephalography, computed tomography of the brain performed according to the instructions did not reveal any alarming symptoms related to the brain.

As an example, the patient E.F., who was treated surgically in the neurosurgery department of SamDTU clinic. We present information from the medical record of a baby born on 03.08.2023 (No. 12301/971).

The patient was examined and treated in the neurosurgery department of the clinic on September 12-18, 2023. According to the patient's mother, the baby was admitted to the hospital due to swelling in the left upper part, moodiness, and general weakness.

According to the mother of the sick baby, the baby was considered sick from birth. The cause of the disease cannot be attributed to a specific cause. The patient received conservative treatment under the supervision of neuropathologists at the place of residence, but due to the tumor not disappearing, a brain multispiral CT scan was performed (Fig. 1) and he was admitted to the neurosurgery department for surgical treatment.

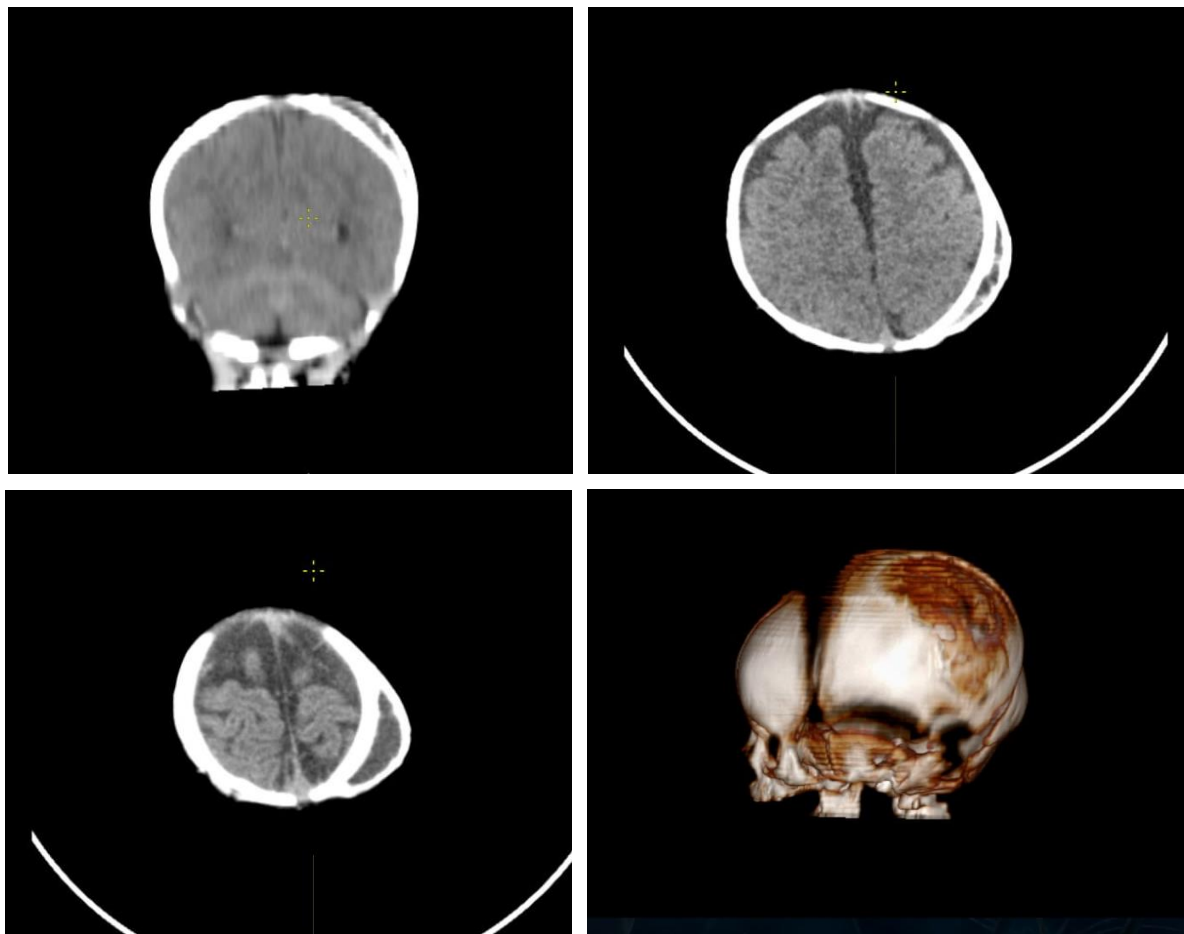
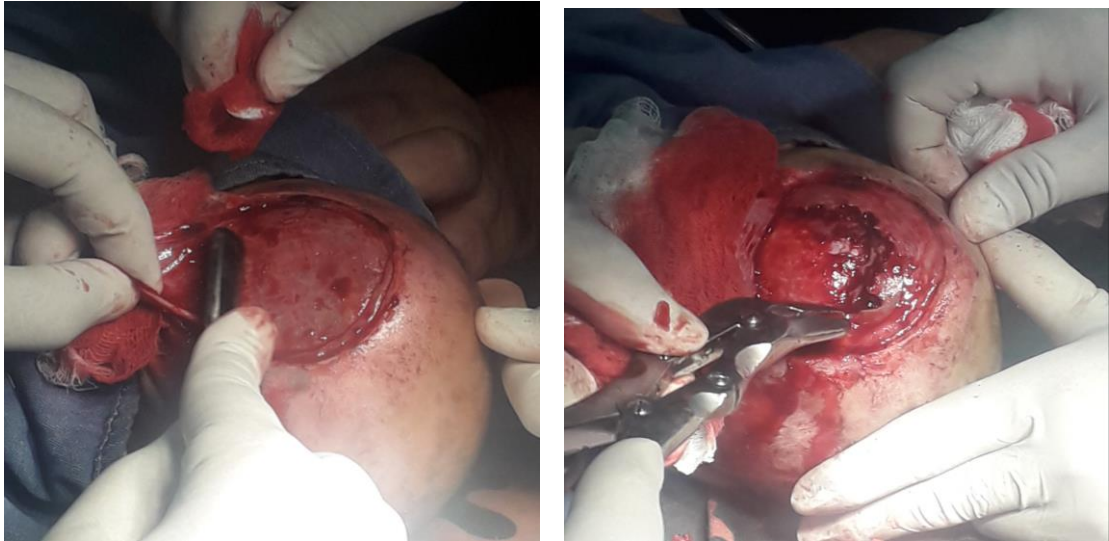


Figure 1. Vemor E.F. preoperative multispiral computed tomography of the brain.

The general condition of the patient is satisfactory. Skin covers are fluid. The subcutaneous fat layer is developed according to age. Breathe freely. A vesicular breath is heard from his lungs. Heart tones are clear. Pulse 112 times in 1 minute. Abdomen is soft, painless. Appetite has weakened.

The state of consciousness is lucid. General brain symptoms are not observed. No meningeal symptoms. Changes in the innervation of the cranial nerves are not detected. Movement and sensory functions in arms and legs are intact. Ankle reflexes: D=S. A local examination reveals a solid swelling in the left upper part of the skull.

Diagnosis: Ossified cephalohematoma in the left upper lobe. On September 13, 2023, the patient underwent a planned operation to remove an ossified cephalohematoma in the left upper part of the skull. (Figures 2 a and 2 b)



Figures 2 a and 2 b. Patient E.F. Stages of surgery for ossified cephalohematoma.

A week after the operation, the patient was sent home after being recommended to a neuropathologist and a pediatrician. In the control multispiral computer tomography of the brain performed after one month, no changes related to the structures of the skull and brain are detected (Fig. 3).

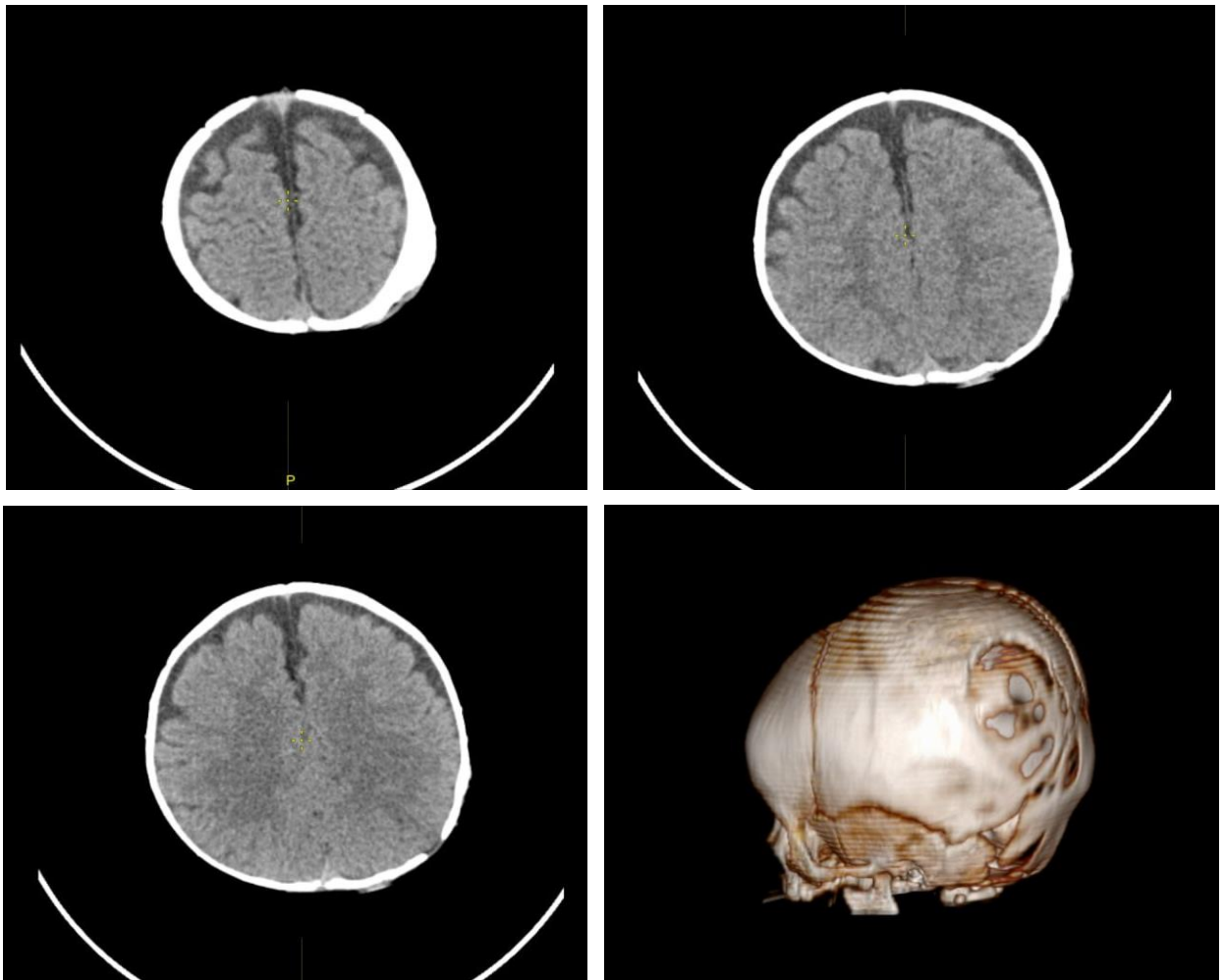


Figure 3. Vemor E.F. control multispiral computed tomography of the brain 1 month after the operation.

Summary. Thus, although the above-mentioned reasons cannot clearly justify the formation of cephalohematomas, it is clear that they have a certain share in the formation of

cephalohematomas. However, among them, the fact that pregnant mothers have extragenital and cardiovascular diseases, taking antiaggregants and anticoagulants during pregnancy creates conditions for the appearance of cephalohematomas. In addition, the vacuum-extractor, "caesarean section" operations used in childbirth have their role in the development of cephalohematomas. Clinical-neurological examinations of infants with cephalohematomas did not reveal clearly developed general brain, focal, meningeal symptoms and changes in the innervation of cranial nerves.

For correct diagnosis of cephalohematomas, additional examination methods such as neurosonography, echo-encephalography, craniography and multispiral computed tomography of the brain can be used.

In the treatment of cephalohematomas, it is advisable to aspirate the non-coagulated blood under the periosteum with a medical syringe, remove hematoma clots by cutting 1.5-2 cm long scalp and soft tissues when it thickens, and surgically remove the formed upper bone plate in ossified cephalohematomas.

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