

Subgaleal Haemorrhage (Previously Subaponeurotic Haemorrhage)

Version 2

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Comments: This guideline is to be followed by health professionals working within the Shrewsbury & Telford NHS Trust

For triennial review

Version	Implementation Date	History	Ratified by	Full Review Date
1	24 th July 2014	Developed from the Neonatal guideline "Subaponeurotic Haemorrhage"; Action following SI	Maternity Governance Maternity Guideline Group	July 2017
2	11 th April 2016	Early full review following high risk case review	Neonatal Governance	April 2019

1.0 Introduction

Subgaleal (or subaponeurotic) haemorrhage is bleeding into the space between the periosteum and galea aponeutica of the scalp. It is usually secondary to trauma to the emissary veins, which traverse this space. The subaponeurotic space is large and every 1 cm increase in head circumference suggests an accumulation of 40 ml or even more blood. Most cases of subgaleal haemorrhage are minor and self-resolving. However large haemorrhages can be life-threatening and need pro-active monitoring and management.

The risk of a subgaleal haemorrhage increases with an instrumental delivery, with the highest risk being with a vacuum extraction. This risk increases if the vacuum has been placed in a less than optimal position or multiple attempts have been made to deliver the baby.

Subgaleal haemorrhage can also follow a non-traumatic caesarean section or normal vaginal delivery. A subgaleal haemorrhage that arises without apparent trauma can be secondary to a primary clotting disorder. A large haemorrhage itself can cause a significant, secondary clotting disorder which will require proactive treatment.

2.0 Aim(s)

This guideline will provide staff with a process in order to monitor neonates at risk of subgaleal haemorrhage and refer when necessary.

3.0 Objectives

Provide staff with a process for monitoring at risk neonates in the immediate postnatal period.

4.0 Definitions

- 4.1 NEWS – Newborn Early Warning System Observation Chart
- 4.2 MIS – Maternity Information System

5.0 Process

- Offer Vitamin K, preferably intramuscular, to all babies who have had any form of instrument applied to their head during delivery
- If the parents decline they will be informed of the increase risk of bleeding in and around the scalp. This information and the parental choice to decline must be documented in the neonatal medical records.
- If the baby requires admission to the Neonatal Unit, advise parents that Vitamin K is administered as part of the routine care and explicit parental consent is not required (**See Neonatal Guideline Vitamin K – administration for babies admitted to the Neonatal Unit**)

5.1 Monitoring

5.1.1 Level 1 Surveillance

(This surveillance will usually take place on the Labour ward)

Inclusion Criteria/ Clinical Indications

- All babies having undergone an operative delivery (including ventouse, forceps and failed operative delivery)
- Any baby that has had a Caesarean Section with forceps to the after coming head

Observations

- Check for swelling.
- The baby's head circumference will be measured **as soon possible after birth**.
- The head circumference will be **re-measured an hour** after the first measurement. This will be entered onto/documentated on the MIS.
- 1 x NEWS assessment follow GREEN/AMBER/RED pathway. If initial observations in **GREEN** discontinue observations unless specified by Neonatal Team or further concerns as listed in **Alerting**. This can be documented on a NEWS chart or on MIS.
- These babies may transfer to a Midwife Led Unit for postnatal care if appropriate.

Alerting

If there are concerns about the baby's behaviour e.g. irritability, "floppiness", pallor or abnormalities of the heart and/or respiratory rate, then the baby will be reviewed by the neonatal team.

An individual plan of care will be drawn up by the neonatal team and a separate set of medical records raised for the neonate.

5.1.2 Level 2 Surveillance

(This surveillance will commence on the Labour Ward and continue on the Consultant Postnatal Ward)

Inclusion Criteria/Clinical Indications

- Concerns about a baby from level 1 surveillance
- At clinician's request
- All failed instrumental deliveries
- A baby with an apgar score of less than 7 (<7) at 5mins with an instrumental delivery.

Observations

- The baby will be monitored **hourly for the first 2 hours** of observation, **then 2 hourly for the next 10 hours (NEWS). This will be documented on a NEWS chart.**
- The pulse rate, respiratory rate, colour and appearance of the face and head will be monitored.
- The head circumference will be checked on admission to the post natal ward and then **4 hourly** until the observation period is finished (earlier if the head circumference is increasing as below, developing a boggy swelling etc). This will be entered onto/documentated on the MIS.

Investigations (by Neonatal Team)

- Take cord blood for pH, lactate, haemoglobin and platelet count. If the cord blood is not available then a heel prick sample for pH, lactate and haemoglobin will be taken and analysed in the blood gas machine
- Babies presenting due to concerns with **level one surveillance** will have blood taken for full blood count and coagulation screen.

Alerting

The neonatal team will be called to review the baby if the baby develops tachycardia or tachypnoea or if the **head circumference increases by 1 cm over the original birth measurement.**

The neonatal team will consider transfer to the neonatal unit for closer monitoring

5.1.3 Level 3 Surveillance require admission to Neonatal Unit

Inclusion criteria/ Clinical Indications

- Abnormalities detected in Level 2 surveillance
- Where there is clinical suspicion of subgaleal haemorrhage immediately after delivery
- Any finding of anaemia, thrombocytopenia, or coagulation abnormality on the initial level 2 blood tests.

Observations

- The baby's heart and respiratory rate will be continuously monitored
- If the baby has an arterial line in situ then continuous blood pressure monitoring will be used. If not, then it will be monitored 2 hourly manually
- The head circumference will be measured hourly until the bleeding and coagulopathy is under control.

Investigations

If these have not been performed in the last 4 hours the baby will have:

- Full blood count from the lab
- Coagulation screen
- Blood gas analysis including lactate and haemoglobin (to compare with the laboratory values and to give an earlier warning of anaemia)
- These investigations will be repeated 4 hourly until the baby is stable. The blood gases and lactate can be repeated more frequently, dependant on the baby's clinical condition.
- Skull x-ray to exclude fracture
- Cerebral ultrasound scan to exclude significant intracranial haemorrhage.

5.2 Management

A significant subgaleal haemorrhage is a medical emergency which can have a high mortality.

In the early stages of a subgaleal haemorrhage, the haemoglobin level may be normal despite significant haemorrhage.

Similarly, some babies with large subgaleal haemorrhages may not develop a tachycardia and hypotension until very late on in the illness, due to raised intracranial pressure.

- According to the results of investigations, the baby will need an urgent and rapid blood transfusion given over 1-2 hours (or given by hand if the baby's clinical condition indicates this), platelets (if $<100 \times 10^9/l$), and FFP.
- If the bleeding is not controlled following the first transfusion of blood (with or without other blood products), activate and follow the neonatal severe haemorrhage protocol.

5.2.1 Complications

- Coagulopathy: Check for clotting abnormalities including fibrinogen levels. Treat with FFP / Cryoprecipitate depending on the abnormality
- Thrombocytopenia : Treat with platelet transfusions, if platelet levels are <100
- Skull fracture : Arrange for CT scan of the head
- Intracranial haemorrhage : Consider cranial ultrasound scan
- Neonatal encephalopathy: Correct the coagulopathy and thrombocytopenia before initiating therapeutic hypothermia. Do not initiate cooling before discussing with consultant..
- Neonatal jaundice

6.2 Outcome

- Early studies report a significant mortality from this condition. However it may be lessened with appropriate monitoring and treatment.
- The long term outcome is related to the presence and the severity of any neonatal encephalopathy or other cerebral injury.

6.0 Training

New midwives, students and medical staff will be informed about the process for accessing guidelines or protocols during their induction.

7.0 Monitoring/audit

Audit/Monitoring of this guideline will follow the process 5.2.1 within the Monitoring and Audit Policy 105 (Maternity). In conjunction with the SaTH Clinical Audit Policy CG25 (2008)

8.0 References

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. College Statement C-Obs 28. Prevention, Detection and Management of Subgaleal Haemorrhage in the Newborn. July 2012

