

South Australian Perinatal Practice Guideline

Histopathology Management of the Placenta

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant women. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of Perinatal Practice Guideline (PPG)

This guideline outlines the clinical indications for histological examination of the placenta. It includes the technique for placental swabbing.

Histopathology Management of the Placenta

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Summary of Practice Recommendations

All placentas should have a gross examination by the attending clinician.

Send all placentas for histological assessment if any clinical indications are noted following maternal consent.

Ensure all relevant clinical information is included on the request form.

Placentas that are not sent immediately for pathological examination should be refrigerated for one week in individually labelled plastic bags.



Histopathology Management of the Placenta

Introduction

The placenta is a fetal organ consisting of an umbilical cord, membranes (chorion and amnion) and parenchyma¹

Examination of the placenta may yield information on the impact of maternal disorders on the fetus or the cause of preterm birth, fetal growth restriction, neurodevelopmental impairment or timing of intrauterine death^{1,2}

Placental examination is an essential component of the autopsy in cases of fetal or neonatal death¹

Placental examination may also aid in the following situations¹:

- Medico-legal issues regarding the presence and timing of perinatal stresses and insults (acute versus chronic)
- Diagnosis of specific causes of adverse pregnancy outcome
- Identification of the type of twins (zygosity) and any associated pathology
- Identification of recurrent disorders (e.g. chronic villitis, chronic histiocytic intervillitis)
- Provide information to improve outcomes in a subsequent pregnancy

Verbal consent is required from the woman before sending her placenta for histopathology.

Gross placental examination^{1,2,3}

General:

All placentas should have a gross examination by the attending clinician noting:

- Weight
- Number of vessels in the cord
- Cord length and insertion point
- Meconium staining or any other discoloration of membranes
- Completeness of placenta and membranes
- Multiple lobes
- Focal lesions

Additional examination may include:

Placenta:

- Fetal surface - colour, masses, fibrin, thrombi in fetal surface vessels
- Maternal surface - completeness, masses, haematomas
- Parenchyma - texture, colour, percentage occupied by any lesions

Cord:

- Colour
- Knots
- Tethering
- Hypocoiling or hypercoiling
- Strictures
- Ulcers or other lesions

Before discarding check the woman's history for any indications for histological placental examination (see indications below and [Appendix 1](#))

Note: Placentas that are not sent immediately for pathological examination should be refrigerated for one week in individually labelled plastic bags. Histological examination may be indicated for neonatal reasons within the first week of life⁴.



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Indications for histological placental examination^{1,2,3,4}

Maternal indications

- Poor obstetric history
- Maternal death
- History of > 2 miscarriages
- Significant disease (e.g. hypertension, diabetes, preeclampsia, thrombophilia, autoimmune disease, severe anaemia, thrombophilias)
- Drug or alcohol misuse
- Antepartum haemorrhage
- Cases of prolonged rupture of membranes, suspected chorioamnionitis or intrapartum fever (>38°C)
- Oligo / polyhydramnios
- Preterm birth

Fetal indications

- Perinatal loss (mid-trimester miscarriages, stillborn infants, early neonatal deaths)
- Multiple pregnancy with same sex infants
- Triplet and higher order multiple pregnancies
- Cases of discordant twin growth with greater than 20% weight difference
- Gestational age < 36⁺⁶ weeks
- Intrauterine growth restriction < 10th percentile
- Macrosomia > 90th percentile
- Meconium-stained liquor
- Congenital abnormality
- 5 minute Apgar ≤ 6
- Neonatal sepsis investigation
- Fetal anaemia / haemorrhage
- Rhesus (and other) isoimmunisation

Placental indications

- Placental abnormalities detected prenatally (e.g. vascular channels, chorioangioma etc.)
- Physical abnormality of the placenta (e.g. infarcts, retroplacental haematoma, discolouration, malodour)
- Placental abruption
- Placenta praevia
- Morbidly adherent placenta
- Abnormal placental appearance
- Abnormal cord e.g. thrombosis, torsion, true knot, single artery, absence of Wharton's jelly
- Short cord (< 32 centimetres at term) or long cord (> 80 centimetres)
- Small or large placental weight or size for gestational age
- Marginal or velamentous insertion
- Invasive procedures with suspected placental injury

Standardised clinical information⁵

On the pathology request form, list relevant information about the pregnancy and indications for placental examination (a *Placenta Check* form may be attached to the Pathology request form to assist completion of details - see [Appendix 2](#))

If short or long cord, measure any piece of cord not included with placenta and document on form
Include gestation



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Placental swabbing

Bacterial cultures may be requested in cases of suspected chorioamnionitis in either a live or stillborn baby

Procedure (see [Appendix 3](#)):

- Incise the amnion with a sterile scalpel
- Using clean forceps gently lift the amnion (peel the amnion away from the chorion to expose a small amount of the fetal surface)
- Swab between the amnion and chorion with a sterile swab

Note: This technique is especially useful in detecting group B streptococcus



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References

1. Roberts DJ. Gross examination of the placenta. Up to date [online] 2013 April [cited 2013 May 7]; [10 screens]. Available from URL: <http://www.uptodate.com/contents/search>
2. Roberts DJ. Placental pathology, a survival guide. Arch Pathol Lab Med 2008; 132:641-51.
3. Kent AL, Dahlstrom JE. Placental assessment: Simple techniques to enhance best practice. ANZJOG 2006; 46: 32-7.
4. Maternal and Perinatal Mortality Committee. Maternal and Perinatal Mortality in South Australia 2015. Adelaide: SA Health, Government of South Australia, 2017.
5. Spencer MK, Khong TY. Conformity to guidelines for pathologic examination of the placenta. Arch Pathol Lab Med 2003; 127: 205-07.



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Appendix 2: Placenta Check form

Placenta Check



Please attach to Pathology Request Form

Patient Details

Mother's Name

UR Number

Referring Doctor

Hospital

Male Female Birthweight/s (if known)

Additional Information

Gestation weeks (must be completed)

- | | | |
|--|--|---|
| <input type="checkbox"/> Abnormal CTG | <input type="checkbox"/> IUGR | <input type="checkbox"/> Prolonged rupture of membranes |
| <input type="checkbox"/> Abruption | <input type="checkbox"/> Macrosomia | <input type="checkbox"/> Retained placenta |
| <input type="checkbox"/> Chorioamnionitis? | <input type="checkbox"/> Meconium | <input type="checkbox"/> Smoker |
| <input type="checkbox"/> Diabetes (Gestational/Type I/Type II) | <input type="checkbox"/> Neonatal death | <input type="checkbox"/> Stillbirth |
| <input type="checkbox"/> Febrile mother | <input type="checkbox"/> Oligohydramnios | <input type="checkbox"/> Substance abuse |
| <input type="checkbox"/> Fetal loss/miscarriage | <input type="checkbox"/> Placenta praevia | <input type="checkbox"/> Thrombophilic condition |
| <input type="checkbox"/> GTP (specify _____) | <input type="checkbox"/> Placental abnormality (specify _____) | <input type="checkbox"/> Twins - monochorionic / dichorionic |
| <input type="checkbox"/> HELLP syndrome | <input type="checkbox"/> Polyhydramnios | <input type="checkbox"/> Umbilical cord abnormality (specify _____) |
| <input type="checkbox"/> High BMI | <input type="checkbox"/> Pre-eclampsia | <input type="checkbox"/> Other |
| <input type="checkbox"/> IVF | <input type="checkbox"/> Prematurity | |

Signature _____ Date ____ / ____ / ____

Note: Not all of these factors are indications for pathological examination in isolation. Please refer to the latest Perinatal Practice Guidelines.

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For our patients and our population





Placenta pathology

Swab for microbiology

1



With a sterile scalpel blade make an incision into the amnion.

2



Using clean forceps gently lift the amnion.

3



Swab the space between the amnion and the chorion.

4

Complete a pathology request form for microbiology, including clinical notes.
Please dispatch promptly.

Supporting Training and Medical Research

Histopathology Management of the Placenta

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Rebecca Smith
Prof Yee Khong
Alison Tanner
Dr Anupam Parange
Dr Jude Chapman-Wardy
Dr Sue Kennedy-Andrews
Dr Feisal Chenia

Original Write Group Members

Allison Rogers
Dr Lynette Moore
Prof Yee Khong

SAPPG Management Group Members

Sonia Angus
Dr Kris Bascomb
Lyn Bastian
Elizabeth Bennett
Dr Feisal Chenia
John Coombas
A/Prof Rosalie Grivell
Dr Sue Kennedy-Andrews
Jackie Kitschke
Catherine Leggett
Dr Anupam Parange
Dr Andrew McPhee
Rebecca Smith
A/Prof John Svigos
Dr Laura Willington



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