Corewell Health
East Laboratory

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Related Documents:

PLACENTA - SINGLETON

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I. Purpose
To provide a procedure for the gross examination of a singleton placenta.

II. Principle
To take histologic sections to demonstrate the pathologic process so that a diagnosis can be made microscopically by a Pathologist.

III. Equipment
1. Ruler
2. Forceps
3. Scalpel
4. Scissors
5. Large knife

IV. Special Safety Precautions
1. **PPE** should be worn.
2. **10% FORMALIN** is a known carcinogen.

V. Supplies and Reagents
1. **10% NEUTRAL BUFFERED FORMALIN** (pH range 6.9-7.2)

VI. Quality Control
All remaining tissue should be retained in accordance with CAP requirements.

VII. Limitations/Notes
The following may influence the validity of test results:
1. If chromosome analysis is requested, the specimen must be sent to cytology in the fresh state.
2. The specimen should be fixed in formalin.

VIII. Procedure

1. The specimen will arrive fresh.
2. Before adding formalin to the specimen, make sure that cytogenetic testing is not required.
3. Locate the point of rupture of the extraplacental membranes and measure the distance from the point of rupture to the nearest edge of the placental disc (cm.). If the membranes are torn, the point of membrane rupture cannot be identified.
4. Examine the membranes and the membrane insertion. Check for thickened areas that may represent a fetus papyraceous.
5. Create a membrane roll by cutting a strip of membrane and rolling the strip inward from the point of rupture toward the edge of the disc. Once the roll is adjacent to the edge of the disc, cut the roll away from the placenta (may include a portion of the edge of the disc). Take a 0.3 cm thick perpendicular section through the roll.
6. After the section of the membrane roll has been taken, trim the remaining extraplacental membranes from the edge of the placental disc.
7. Measure the attached umbilical cord (2 dimensions – cm.) and examine including color, if it is intact, coiling, and presence of true or false knots.
   - Count the approximate number of coils per 10 cm and include in dictation. For reference, normal coiling is 1-3 coils per 10 cm.
   - If true knots are present, all knots should be assessed for evidence of tightness and circulatory compromise. All knots should be UNTIED/ UNKNOTTED at the time of grossing so the involved segment of cord can be properly and thoroughly evaluated. Look for evidence of compression, indentation, grooving, loss of Wharton's jelly, stricture, and (most importantly) thrombosis. Assess the diameter and color of the cord on both sides of the knot, looking for evidence of congestion distal to the knot. These features or lack thereof, should be mentioned in the gross. A section should be taken through the area of knotting to be assessed for histologic evidence of the above.
8. Describe the type of umbilical cord insertion and measure the distance from the insertion point to the nearest edge of the disc (cm.).
9. Remove the umbilical cord from the disc by cutting it 1 cm above the cord insertion site.
10. Serially section the umbilical cord and determine how many vessels are present.
11. If an additional portion of umbilical cord is loose within the container, measure and describe it.
12. Weigh and measure the placental disc without the attached extraplacental membranes and umbilical cord.
13. Examine and describe the fetal surface. Note any lesions that are present.
14. Examine and describe the maternal surface. Note any areas where the cotyledons are disrupted.
15. Serially section the placenta from the maternal side and examine the parenchyma. Describe and measure (cm.) any areas of abnormality that are present. If the abnormality is diffuse, estimate a percentage of the parenchyma that is involved. Also describe the location of the abnormality (central vs. peripheral) and whether or not it involves the fetal surface or the maternal surface.

16. Describe any blood clot that is either loose within the container or adherent to the maternal surface.
17. If the blood clot is adherent to the maternal surface, describe whether or not it compresses the parenchyma and measure the thickness of the blood clot (cm.).
18. Describe any loose placental parenchyma that is present.
19. It is recommended that the following format for dictation be utilized:
    Received fresh, labeled with the patient's name, and indicated to be "placenta" is a single placenta that trimmed of the umbilical cord and extra-placental membranes weighs ___ grams and measures __x__x__ cm. The umbilical cord is (color), has approximately __ coils per 10 cm, an (intact/disrupted) surface, (two/three) vessels, and measures __ cm in length with a diameter of __ cm. The umbilical cord insertion is (central/paramarginal/marginal /eccentric/velamentous/furcate), is __ cm from the nearest edge, and there (are/is a) (no gross lesions noted/false knot/true knot). (Separate in the container is an additional segment of umbilical cord that measures __ cm.) The extra-placental membranes are (color, opacity) and (insert at the margin/__% circummarginate/ circumvallate with a rim to __ cm). The point of membrane rupture is (__cm from the edge of the placental disc/cannot be determined). The maternal surface is lobulated, spongy, (color) and the cotyledons appear (intact/focally disrupted). (There is a (small/large) amount of loosely attached (densely adherent) blood clot located at the (location) that measures __x__x__ cm which does/does not indent the maternal surface). The placental disc is serially sectioned revealing (beefy red/pale) parenchyma with (no discrete/single/multiple/firm/soft circumscribed/ill-defined/location/ color) lesions measuring __x__ cm). (Other abnormalities noted on gross examination include: succenturiate lobe, marked subchorionic fibrin, detached clotted blood in the container/ detached placental parenchyma in the container measuring __x__x__ cm).
20. Representative sections should be submitted as follows:
    1: Cross-section of cord, 2 cm above cord insertion & a full thickness section of disc taken near cord insertion
    2: Cross-section of cord at fetal end & a full thickness section of disc, half-way between cord insertion and margin
    3: A membrane roll
    4: Maternal slivers
    5: Any gross lesions or gross abnormalities that are mentioned in the dictation.
21. The cassettes should be loaded on the appropriate large tissue processor to allow for proper fixation.

IX. References

1. College of American Pathologists, Cancer Protocols and Checklists, Colon and Rectum (revised July 2008).
2. Hruban RH, Westra, WH, Phelps, PH, & Isacson, C: Surgical Pathology Dissection An Illustrated Guide, New York, NY, Springer-Verlag Inc., 1996.
3. Lester, SC: Manual of Surgical Pathology, New York, NY, Churchill Livingstone, 2001.
4. Parfitt, JR, Driman, DK: The total mesorectal excision specimen for rectal cancer: a review of its pathological assessment. Journal of Clinical Pathology 2007; 60:849-855.

X. Authorized Reviewers

1. Medical Director, Anatomic Pathology
2. Chief, Surgical Pathology

XI. Document Control

Location of Master: Master electronic file stored on the Beaumont Laboratory server under S:\AP_Grossing_Manual
Number of Controlled Copies posted for educational purposes: 0
Number of circulating Controlled Copies: 1
Location of circulating Controlled Copies: Master Grossing Manual located in Surgical Pathology

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Document History

Signature	Date	Revision #		Related Documents Reviewed/ Updated
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Ali-Reza Armin,MD	10/10/2008	**r00**		
Anne Tranchida PA(ASCP)	10/20/2009	**r00**		
Revised by: Heather Genson, HTL(ASCP)^{CM}PA^{CM}	1/26/2011	**r01**	Added procedure for true knot and block 4 maternal slivers to standard sections	
Approved by: Ali-Reza Armin,MD	1/26/2011	**r01**		
Ali-Reza Armin,MD	10/20/2011	**r01**		
Ali-Reza Armin,MD	10/4/2013	**r01**		
Mitual B. Amin,MD	2/18/2015	**r01**		
Zhenhong H. Qu, MD	3/21/2015	**r01**		
Kurt Bernacki, MD	10/27/2017	**r01**		
Kurt Bernacki, MD	10/22/2019	**r01**		
Kurt Bernacki, MD	10/20/2021	**r01**		
Jawwad Arshad, MD	3/20/2023	**r01**		
Revised by: Heather Genson, HTL(ASCP)^{CM}PA^{CM} Heather Genson	11/15/24	**r02**	Added to include number of coils	
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