

Management of Occiput Posterior

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1

Disclosures

- ▶ None

2

Outline

- ▶ Definitions
- ▶ Incidence
- ▶ Risk Factors
- ▶ Complications
- ▶ Assessment
- ▶ Management & Techniques

3

The diagrams illustrate fetal head positions: Occiput Anterior (OA) and Occiput Posterior (OP). Below these are 3D renderings of the fetal skull and a schematic of the skull sutures. The sutures shown include the Frontal (metopic) suture, Coronal suture, Anterior fontanelle, Sagittal suture, Lambdoid suture, Posterior fontanelle, and Lambdoid suture. The Maternal pelvic bones are also indicated.

4

A photograph of a newborn's head with three colored lines indicating different diameters: a green line for the suboccipitobregmatic diameter, a yellow line for the occipitofrontal diameter (flexed), and a red line for the occipitofrontal diameter (deflexed).

OA: suboccipitobregmatic diameter 9.5 cm (green)
OP (flexed): occipitofrontal diameter 11.0 cm (yellow)
OP (deflexed): occipitofrontal diameter 13.5 cm (red)

5

Occiput-Posterior (OP)

- ▶ ~15-50% incidence at term
 - ▶ 60-90% rotate spontaneously to OA in 1st/2nd stage of labour
 - ▶ For OP at beginning of 2nd stage, only 15% will rotate to OA spontaneously
- ▶ ~5% incidence at vaginal birth
 - ▶ ROP (~60%), LOP (~30%), DOP (10%)

6

Occiput-Posterior (OP)

- ▶ Risk factors:
 - ▶ Nulliparity, age >35yrs, obesity, African-descent, previous OP delivery, small pelvic outlet (android/anthropoid), gestation >41w, weight >4000g, anterior placenta, epidural (controversial)
- ▶ Epidural:
 - ▶ More relaxed levator complex, inhibits rotation of OP to OA
 - ▶ Cochrane Meta Analysis (4 studies, 673 patients):
 - ▶ Malposition appears to be more common in the epidural group, but the lower limit of the CI just crosses the line of no effect, so this result is unclear (RR 1.40, 95% CI 0.98 to 1.99)

Epidural versus non-epidural or no analgesia for pain management in labour

■ Epidural analgesia (opioids, nitroglycerin, benzocaine, bupivacaine) ■ Epidural analgesia (opioids, nitroglycerin, benzocaine, bupivacaine) ■ Epidural analgesia (opioids, nitroglycerin, benzocaine, bupivacaine)

7

Complications of OP

Maternal Complications	Fetal Complications
Protracted first stage	Low 5-minute Apgars <7 (OR 1.5, 1.17-1.91)
Protracted/arrested second stage	Umbilical artery acidemia (OR 2.92, 1.84-4.62)
Increased rate of augmentation	Meconium (OR 1.29, 1.17-1.42)
Assisted vaginal birth (44% vs 24%, p<0.05)	Birth trauma (OR 1.77, 1.22-2.57)
Obstetrical anal sphincter injuries	NICU admission (OR 1.57, 1.28-1.92)
OP Vacuum: 33%	
POP Forceps: 50-70%	
Unsuccessful AVB	
Cesarean section (42% vs 14%, p<0.05)	
Inadvertent extension of CS	

8

Assessment of 2nd Stage Progress

- ▶ Physical examination every hour to assess progress, same person if possible
- ▶ Earlier if abnormal FHR, uncoordinated contractions and/or urge to push if latent
- ▶ Vital signs, urine output (hematuria)
- ▶ Uterine activity
 - ▶ Frequency, Duration, Strength, Pattern
- ▶ Abdominal exam
 - ▶ Presentation, Lie, Position, 5ths "above the brim"
- ▶ Vaginal exam
 - ▶ Dilatation, (Effacement), Station, Position, Caput, Moulding, Flexion, Synclitism
 - ▶ Maternal pelvis

9

Abdomen

OA
OP

10

POSITION FLEXION SYNCLITISM

CAPUT

MOULDING

11

Position

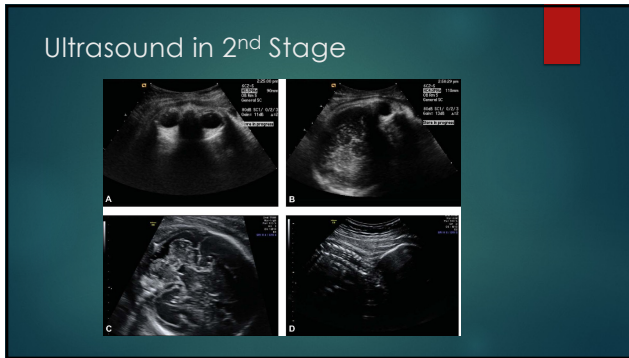
Clinical Expert Series CME

Persistent Occiput Posterior

William H. Barth, Jr, MD

- ▶ All maternity care providers should strive for accuracy
- ▶ Examination can be challenging
 - ▶ Caput, molding etc.
 - ▶ There are many tricks and tips
 - ▶ Feel the ears etc.
- ▶ Between us, we differ in opinion by >45° 30-80% of the time!

12

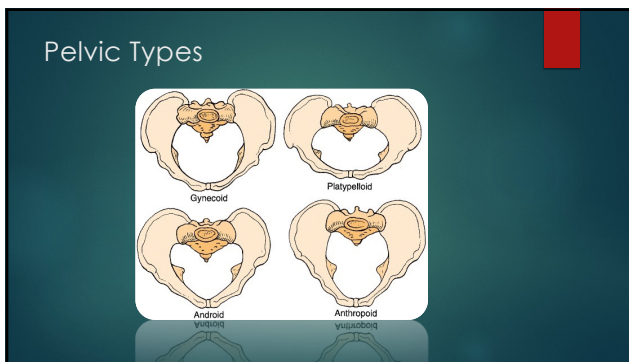


13

If we are all going to be speaking the same language of childbirth, we should all be measuring station in the same way, especially if sharing care, teaching others or performing instrumental deliveries

Palpate ischial spines, then measure (cm) relation of the leading bony part of the fetal head in midline as -5 cm to +5 cm

14



15

- ▶ Leopold's & Pawlik's maneuvers (A/B)
- ▶ Examination of the retropubic angle (C)
- ▶ Examination of the pubic arch (D)
- ▶ Palpating the length of the sacrospinous ligament (E)
- ▶ A short ligament (F) suggests a crowded posterior segment

16



17

You could do nothing...

- ▶ Expectant management
- ▶ (Oxytocin)
- ▶ Reposition / peanut ball
- ▶ Manually rotate early
- ▶ Manually rotate late
- ▶ Pull baby out OP
- ▶ Rotational AVB
- ▶ Cesarean section
- ▶ Some babies will rotate spontaneously
- ▶ But for those that don't they can get into trouble
- ▶ Nothing confidently predicts which will rotate
- ▶ Lack of large high quality RCTs

"Less is not more. More is more." [Dolly Parton]

18

What about the Bradycardia?

- ▶ Increased intracranial pressure frequently leads to bradycardia
- ▶ Intracranial baroreflex is activated when briefly/abruptly stimulated
- ▶ Leads to bradycardia via the vagus nerve
- ▶ Is not a sign of fetal hypoxia

SOGC CLINICAL PRACTICE GUIDELINE

No. 396-Fetal Health Surveillance: Intrapartum Consensus Guideline

July 2017 update to the 2005 guideline. This guideline is available at www.sogc.org

No. 396 March 2019 (Replaces No. 197, September 2007)

Circulatory dynamics during periodic intracranial hypertension in fetal sheep

ANDREW P. BULLOCK, RALPH W. C. SHEPHERD, MARGARET A. NISBET, RICHARD J. THORNTON, AND M. DOUGLAS JONES, JR.

Department of Anesthesiology/Critical Care Medicine and Pediatrics, School of Medicine, The Johns Hopkins University, Baltimore, Maryland (USA)

25

Early Manual Rotation

Prophylactic manual rotation of occiput posterior and transverse positions to decrease operative delivery: the PROPOP randomized clinical trial

Julie Stone, MD, PhD, Peter Casey, MD, PhD, Frank Mousal, MD, Karim Bounieghar, MD, PhD, Patricia Daniels, MD, PhD, Claudi O'Connell, MD, PhD, John Reister, Department, MD

- ▶ 257 pregnant people with OP
- ▶ Randomized to manual rotation vs expectant management
- ▶ Manual rotation associated with:
 - ▶ Less frequent assisted vaginal birth (29.4% vs 41.2%; P=.047)
 - ▶ Shorter 2nd stage (147 mins vs 164mins, p=0.028)
 - ▶ No significant difference in cesarean section (4.8% vs 6.9%, p=0.471)

26

Late Manual Rotation

- ▶ No large high-quality RCTs
- ▶ Success is lower

Manual Rotation in Occiput Posterior or Transverse Positions

Risk Factors and Consequences on the Cesarean Delivery Rate

Caroline Le Roy, MD, Praline Sorens, Thomas Schmitz, MD, Dominique Cabrol, MD, PhD, and Francois Goffinet, MD, PhD

27

Why don't you just pull them out OP???

Operative vaginal delivery: A comparison of forceps and vacuum for success rate and risk of rectal sphincter injury

Dana P. Damron, MD, Eleanor L. Capeless, MD

John A. Granger, MD, Ernest P. Chaboyer, MD

- ▶ AJOG, 2004
- ▶ Retrospective review, USA (Vermont)
- ▶ All cases of **vacuum & non-rotational forceps** for OA & OP fetuses
- ▶ 1802 deliveries: 1438 OA & 364 OP

	Vacuum	Forceps	Totals
Occiput anterior (OA)	1097	341	1438
Occiput posterior (OP)	246	118	364
Total	1343	459	1802

28

Why don't you just pull them out OP???

Operative vaginal delivery: A comparison of forceps and vacuum for success rate and risk of rectal sphincter injury

Dana P. Damron, MD, Eleanor L. Capeless, MD

	Vacuum	Forceps	OR (95% CI)	P-value
DA	69/1097 (6.3%)	3/341 (0.9%)	7.53 (2.35-24.08)	<.0001
OP	81/245 (33.1%)	16/118 (13.6%)	3.15 (1.74-5.68)	<.0001

Station	Vacuum	Forceps	OR (95% CI)	P-value
Mid	8/28 (28.6%)	10/12 (83.3%)	12.5 (2.22-70.19)	<.001
Low	128/185 (69.2%)	84/96 (87.5%)	3.14 (1.59-6.21)	<.001
Outlet	12/12 (100%)	6/6 (100%)	NS	

	Vacuum	Forceps	OR (95% CI)	P-value
DA	273/1028 (26.4%)	182/338 (53.8%)	3.25 (2.53-4.21)	<.0001
OP	53/160 (33.1%)	73/102 (71.6%)	5.25 (3.02-9.10)	<.0001

29

Christian Caspar Gabriel Kielland

(d. 18 March 1941, Oslo, Norway)

▶ 1915



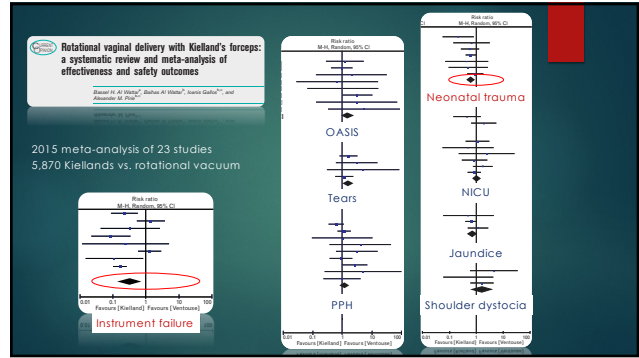

- ▶ Malrotation (OP or OT = direct OA)
- ▶ Asynclitism
- ▶ Deflexion

30

Kielland Rotational Forceps

- ▶ Performed by clinicians with skill & experience
- ▶ Gives you a level of control & feedback not seen with other techniques
- ▶ Can safely correct all aspects of malposition with best chance of success
- ▶ Not affected by caput, moulding, or poor maternal effort
- ▶ Accurate abdominal & vaginal exams are mandatory
- ▶ This is the true Art of Obstetrics!

31



32

2nd stage CS outcomes?

Full dilation cesarean section: a risk factor for recurrent second-trimester loss and preterm births

2nd stage cesarean section is associated with higher:

- ▶ Maternal admissions to ICU
- ▶ Blood transfusion rates
- ▶ Neonatal death rates
- ▶ Admissions to NICU
- ▶ Rates of Apgar score <7 at 5 min
- ▶ Future placenta accreta spectrum/hysterectomy or uterine rupture
- ▶ Risk of spontaneous preterm delivery next pregnancy
- ▶ Higher rates of recurrent sPTB <30 weeks
- ▶ Increased risk of perinatal death from prematurity

33

Summary

- ▶ POP: Challenging to predict & diagnose
- ▶ POP: Associated with considerable maternal morbidity
- ▶ POP: Associated with neonatal morbidity
- ▶ Comprehensively assess fetal position throughout
 - ▶ You have NEVER completed your exam without the abdomen
- ▶ Consider a peanut ball
- ▶ Please do manual rotation
- ▶ Safely learn a technique other than pulling out OP
 - ▶ It's never too late
- ▶ Prevent the first cesarean!

34

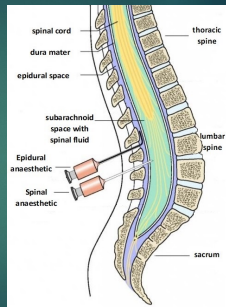
Thank you!

35

Analgesia & Anesthesia

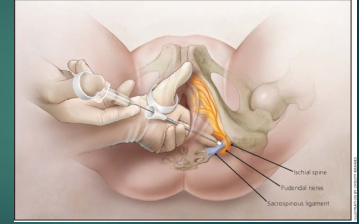
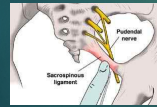
36

Epidural & Spinal



37

Pudendal



38