Uterine Rupture
Patient Safety Learning

Alberta Health Services

Uterine rupture is tearing of the uterine wall extending to the uterine serosa. Uterine dehiscence is when the rupture is confined to the uterine muscle without affecting the serosa.(Nahum, 2016).

Uterine rupture is a serious obstetrical event in pregnancy with the potential for severe maternal and perinatal mortality and morbidity.

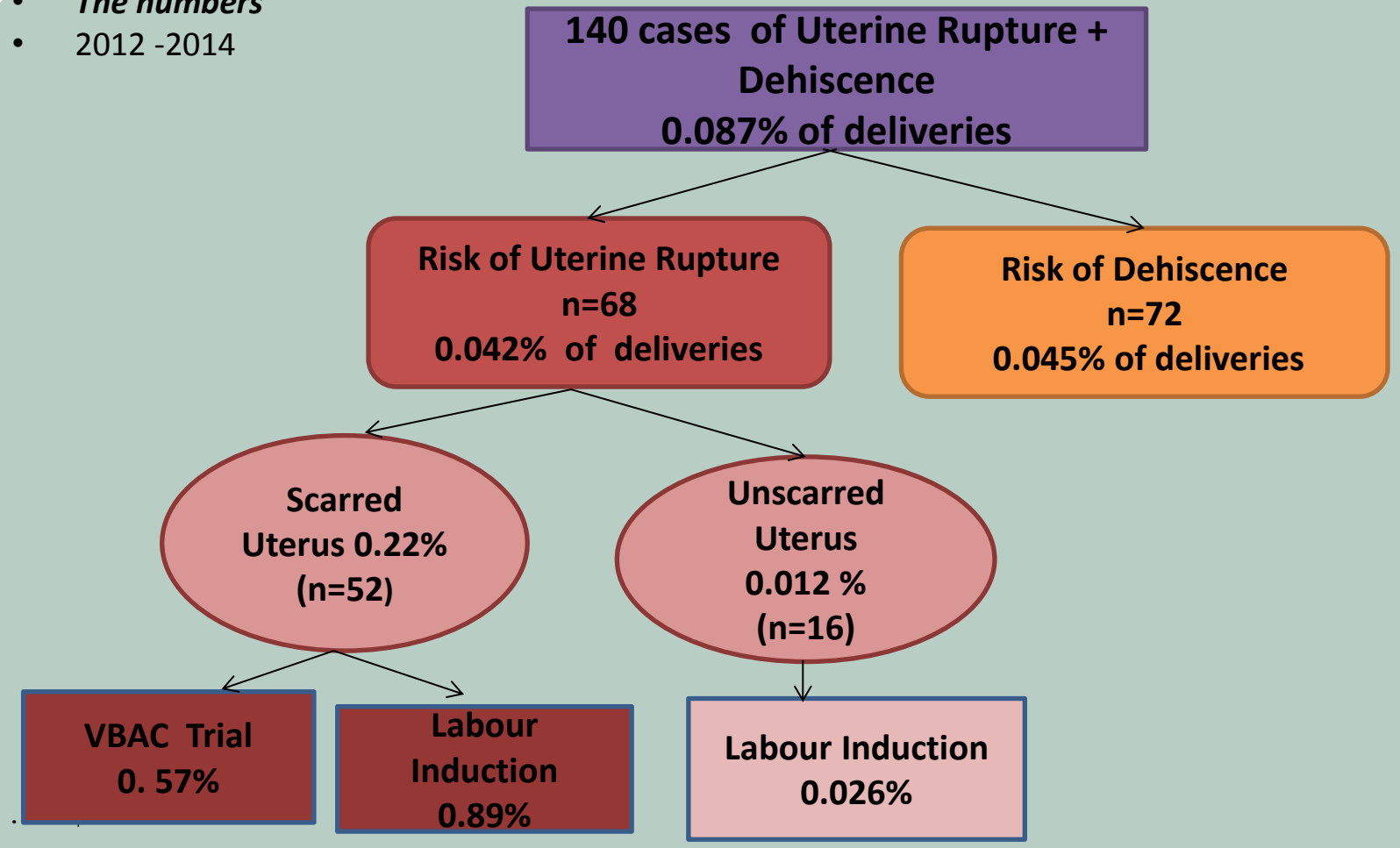
Uterine rupture most often occurs in women with a previous scarred uterus, but can occur in an unscarred uterus.

Risk is increased with induction of labour in either cases and in women attempting a VBAC

The literature suggests that rates may be increasing due to the rise in C/S rates.

Alberta Perinatal Health Program - Uterine Rupture - 2012-2014

- ***The numbers***
- 2012 -2014



The uterine rupture rates in Alberta are consistent with rates reported in the literature for developed countries.

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In the analysis of 2012 to 2014 Alberta data:

- There is no reported maternal mortality from uterine rupture in this time period.
- Three mothers are admitted to ICU.
- Four mothers require a hysterectomy.
- Fetal heart rate abnormalities are present in 61.8% of cases.
- Pain atypical of contraction pain is described by 48.6 % of women as constant pain; pain radiating to the shoulder and /or “break through pain” in spite of epidural.
- Bleeding is present in 14.7 % of women with uterine rupture.
- Of women with a uterine rupture:
  - 88.2 % have a parity of 1-3;
  - 2.9% a parity of $\geq$ 4
  - 10.3 % are nulliparous.

Perinatal outcomes of babies born to women with uterine rupture in this cohort of women included:

- Stillbirth rate for women with uterine rupture of 21.4 per 1000 total births compared to 7.2 per 1000 total births.
- Neonatal mortality rate with uterine rupture is 29.2 per 1000 live births compared to overall rate of 3.8 per 1000 total live births.
- Of babies live born to mothers with a uterine rupture 7.9% had an arterial pH of <7; compared to 0.6 % of live births . Of babies born after uterine rupture 14.4% had a 5 minute APGAR Score <7 ; compared to 2.8 % of total live births.

Risk Factors

- Previous scarred uterus
  - Increased with VBAC trial of Labour (TOL)
  - Increased with induction of labour (IOL}
- C/S -classical or inverted T-incision or myomectomy
- Parity, multiple gestation, Bicornuate uterus
- Previous uterine rupture
- Increased BMI
- Advanced maternal age
- Gestational age > 40 wks
- Abdominal Trauma

Symptoms (variable)

- Marked Fetal Heart Rate Changes (bradycardia, tachycardia, severe variable deceleration, baseline)
- Change in uterine contractions (increased, sudden loss of frequency or intensity)
- Change in maternal status -

(tachycardia, hypotension, loss of consciousness (LOC) , shock)

- Vaginal bleeding
- Loss of fetal station or sudden shift in fetal position
- Onset of intense uterine pain, constant pain, shoulder pain, break through pain with epidural

Practice Points : Patient Assessment in Labour

- Document contemporaneous Maternal Heart Rate and Fetal Heart check q 30-60 minutes – Electronic fetal monitoring technology is capable of monitoring and recording maternal heart rate (MHR) patterns that mimic fetal heart rate (FHR) patterns. ACTION: Confirm presence of fetal heart rate.
- Fetal Heart Rate atypical or abnormal – gradual change or sudden. Base line may wander. ACTION: STOP Oxytocin induction (if inducing) and CALL physician.
- Uterine contractions > 5 per 10 minutes -Tachysytole or change in contraction pattern (loss of intensity, irritable pattern). ACTION: STOP Oxytocin (if Inducing). Reassess patient and CALL Physician
- Assessment of abdominal pain –new abdominal pain and/or atypical abdominal pain – between contractions, radiating pain . EMERGENT ACTION
- Loss of fetal station, change in fetal position decrease in dilation of cervix. EMERGENT ACTION
- Maternal change in status (tachycardia, bleeding, LOC Shock – EMERGENT ACTION

Recommendations

- ✓ Develop a Communiqué "Patient Safety Alert" to increase awareness of risk factors and signs and symptoms of uterine rupture.

- ✓ Increase awareness of the risks and signs and symptoms of uterine rupture by:
  - ✓ Promoting completion of the More OB Chapter on Vaginal Birth after Cesarean Section.
  - ✓ Promoting APHP APPEL modules on Vaginal Birth after Cesarean Section and Pain Management in Labour
  - ✓ Developing a topic on uterine rupture in Obstetrical Emergencies lessons for Emergency nurses.

- ✓ Include risks and signs of symptoms for uterine rupture as a component of the induction of labour knowledge topic. This should include methods for induction of labor for women attempting vaginal birth after C/S (VBAC). Outpatient induction of labour for women with a previous C/S or scarred uterus is not recommended.

- ✓ Develop a decision tool for diagnosis and treatment of a pregnant women presenting in pregnancy with acute abdominal pain. This should include specialist consultation early in the process. .

- ✓ Develop a guide for health practitioners in counseling women with a previous C/S on Vaginal Birth After C/S (VBAC) vs elective repeat C/S (ERCS) to assist women in making an informed choice. A plan of care agreed upon between the women and health care providers should be documented in the prenatal record.

- ✓ Develop a provincial obstetrical risk management tool which includes risks of uterine rupture.