INTRAN® PLUS USER GUIDELINES

Intrauterine Pressure Monitoring Systems

Precautions

A Description of INTRAN® PLUS

Preliminary Information

Active Management of Labor

Intrapartal Amnioinfusion

Recommended Procedure:
Catheter Preparation and Insertion

Alternative Procedure:
Catheter Preparation and Insertion

UTAH MEDICAL PRODUCTS INC.

7043 South 300 West
Midvale, Utah 84047
Tdl Free (800) 533-4984
(801) 566-1200

INTRAN PLUS® USER GUIDELINES

CONTENTS

INTRAN® PLUS USER GUIDELINES

Intrauterine Pressure Monitoring Systems

The clinical need to accurately assess uterine contraction frequency, duration, intensity, peak intrauterine pressure and resting tone, while actively managing labor progression or performing amnioinfusion, has resulted in the widespread use of a family of reliable and accurate intrauterine pressure monitoring systems. This product family, known as INTRAN® Plus transducer-tipped intrauterine pressure catheters, offers the following capabilities:

1. Optimum choices of catheter tip size, introducer design, and catheter stiffness based on millions of uses of Utah Medical Products, Inc.'s sensor-tipped catheters.

2. Convenient zeroing or calibration of the intrauterine pressure catheter (IUPC) with any electronic monitor without removing the catheter from the uterus, by using a zero switch located either on the disposable catheter or on the reusable cable.

3. Dual lumen for simultaneous amnioinfusion and uterine activity monitoring with a choice of amniotic fluid visualization means: 1) an amnioinfusion lumen view port with a color guide for periodic assessment of meconium-stained amniotic fluid or 2) a transparent stripe over the catheter amniolumen for fluid flashback near the distal end of the catheter.

4. Packaging which allows easy removal and insertion into the uterus while maintaining aseptic technique.

PRECAUTIONS

The safe and effective use of INTRAN® PLUS depends on the skill of the physician, certified nurse midwife or staff nurse who inserts it. The fetal heart rate and uterine activity should be assessed and recorded during active management of labor, or when physician intervention may be indicated. **INTRAN® PLUS is not inserted when placenta previa is diagnosed or until the origin of uterine/vaginal bleeding is determined. Caution is needed to avoid insertion of the INTRAN® PLUS under the placenta in order to prevent perforation or abruption.** If an ultrasound report is available, determine placenta location prior to insertion. Observe the fetal heart rate pattern immediately after insertion. If variable decelerations appear, it is possible the umbilical cord was entangled with the IUPC. Fetal bradycardia may indicate cord damage.

Hand washing prior to insertion and use of aseptic technique can prevent nosocomial infections. Maintain asepsis as the INTRAN® PLUS is removed from its sterile packaging and inserted into the uterus.

Past literature indicates "internal monitoring alone is not a significant clinical factor in the development of infection in a high risk obstetric population" (*Ledger, W.J.: Complications Associated With Invasive Monitoring. Seminar in Perinatology, 2:187, 1978*). "The factors that facilitate infection seem to be labor, time elapsed since amniotomy, number of pelvic (vaginal) examinations, and preexisting vaginal flora." (*Cibils, L.A.: Electronic Fetal-Maternal Monitoring: Antepartum, Intrapartum, 482, 1981*).

A DESCRIPTION OF INTRAN® PLUS

INTRAN® PLUS consists of a dual lumen catheter made of a proprietary copolyamide material that has been engineered to achieve optimal stiffness. This SensaFlex™ design produces optimum tactility that allows the clinician to sense maternal and fetal tissues while guiding the catheter safely into the correct position for intrauterine pressure monitoring. The catheter may be inserted with or without the use of an introducer. Encapsulated by a soft boot at the distal end of the catheter, a sensitive electronic transducer converts a mechanical pressure signal to an electrical signal at the pressure source in-utero. The combination of these design features produces the most accurate and reliable monitoring of intrauterine contraction intensities available (Figure 1).

The catheter is approximately 32" in length with the connector end keyed to fit a 13 foot reusable cable (Figure 2), which attaches to the uterine activity outlet of the fetal monitor.

The markings for insertion to the level of the introitus are designated at 30 centimeters and 45 centimeters, and are noted by one or two black circumferential lines respectively (Figure 3).

Insertion to the second mark (at the introitus) is suggested, unless clinical assessment of uterine size indicates that insertion to the first mark at 30 centimeters is sufficient, or if resistance is met prior to insertion to the second mark.

Figure 1. INTRAN® PLUS

Figure 2. Reusable cable

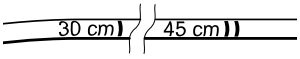

Figure 3. Insertion markings

PRELIMINARY INFORMATION

Because INTRAN® PLUS has the sensor (transducer) in the catheter tip, the weight of the amniotic fluid above the tip increases the baseline pressure as well as the uterine peak contraction pressure. Due to the weight of this fluid, referred to as hydrostatic head pressure, clinicians may note a resting uterine pressure as high as 35 mmHg. However, a more typical range would be 5-25 mmHg. For every inch of liquid above the transducer tip, approximately 2 mmHg pressure will be recorded by INTRAN® PLUS. Therefore, if the uterus is 12 inches in diameter and the INTRAN® PLUS is inserted at the 6 o'clock position with the patient in the Semi-Fowler's position, a hydrostatic additional pressure of approximately 24 mmHg could be added to the resting tone (if the uterus were completely filled with amniotic fluid).

Closely monitor recorded intrauterine pressures in all patient positions, as changes may be helpful in explaining alterations in measured resting pressures. For example (Figure 4), if INTRAN® PLUS is inserted at a 9 o'clock position and the patient is in a Semi-Fowler's position, and then the patient turns to her right side, the intrauterine pressure may increase. Conversely, if this patient turns to her left side, the intrauterine pressure may decrease. This difference in recorded resting tone is a function of the weight of amniotic fluid above the transducer tip, and is a normal, expected finding. You may wish to document baseline resting tone in the maternal right, left and Semi-Fowler's positions.

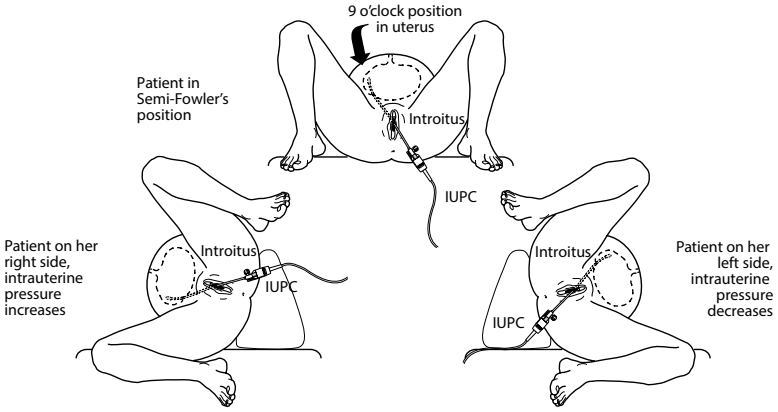

Figure 4. Resting pressure in multiple positions

Variations in resting tone, if not attributable to changes in patient position or movement of the catheter inside the uterus, may have serious implications. The potential for decreased oxygen delivery to the fetus when the uterus is hypertonic or hyperstimulated (defined as contractions less than or equal to 2 minutes apart with an interval of less than 1 minute) is of particular concern when alterations in resting tone occur. Therefore, it is important to observe the fetal heart rate, palpate contractions, and remember:

"EFM (Electronic Fetal Monitoring, implying FHR) is only one parameter of fetal assessment and although it carries minimal risk, it is not a substitute for informed clinical judgement" (ACOG Committee Statement: Obstetrics: Maternal and Fetal Medicine; March, 1979; Rev. July, 1985).

The need to accurately measure uterine activity by insertion of the INTRAN® PLUS should be discussed with the patient by the physician, midwife or staff nurse prior to insertion. INTRAN® PLUS has been successfully used in over 5 million women, and physicians have learned that its use enables them to avoid the multiple insertions that often occur with other IUPCs. INTRAN® PLUS is most easily inserted when the fetus is at -2 station, just prior to active labor.

ACTIVE MANAGEMENT OF LABOR (AMOL)

Active involvement and awareness of the medical staff with the progression of a laboring patient are essential for an optimal birth outcome. During abnormal progression, either or both of two interventions are commonly prescribed: the administration of oxytocin for inducing or augmenting contractions and amnioinfusion to help ensure adequate maternal-fetal circulation during which careful monitoring of uterine contractions is recommended by ACOG. The contraction intensity, or amplitude of peak contraction pressure minus amplitude of resting tone, is the key contractility parameter measured. When summed over a ten minute duration, contraction intensities expressed in mmHg are called "Montevideo units." Hospital protocols often use Montevideo units to help titrate the oxytocin dose.

"When oxytocin is used for induction of labor, ...what precautions should be taken? (Part of answer) … uterine contractions should be monitored closely." ACOG Practice Bulletin Number 10, "Induction of Labor," November 1999.

"...Institution of the proper management for dystocia require(s) assessment of the *powers* (uterine contractility and expulsive effort)..." ACOG Technical Bulletin Number 218, "Dystocia and the Augmentation of Labor, "December 1995.

"In patients with decreased amniotic fluid volume in either preterm or term pregnancies, replacement of amniotic fluid with normal saline infused through a transcervical intrauterine pressure catheter has been reported to decrease both the frequency and severity of variable decelerations. Care should be taken to avoid overdistending the uterine cavity. With continuous amnioinfusion, intermittent discontinuation to assess basal uterine tone (resting tone) or the use of double-lumen uterine pressure catheters is recommended." ACOG Technical Bulletin No 207, "Fetal Heart Rate Patterns: Monitoring, Interpretation, and Management," July 1995.

In addition to measuring contraction intensities, amplitudes of resting tones and peak contraction pressures during key interventions, the onset and frequency of contractions as monitored by an intrauterine pressure catheter may be correlated with fetal heart rate traces to help provided timely detection of conditions that lead to fetal distress.

The design of INTRAN® PLUS allows accurate measurement of contraction intensities over the extended duration of a difficult labor and delivery. Each catheter contains a precalibrated electronic transducer in the tip at the pressure source. The size and shape of the INTRAN® PLUS catheter tip coupled with the tactility of the SensaFlex™ catheter body, helps ensure a safe insertion into the uterus. The amnioinfusion lumen allows a normal saline flow rate of 27 ml. per minute with gravity feed at 32" height, which will support either a bolus infusion until fetal heart decelerations abate, or a slower continuous infusion for prophylactic or therapeutic purposes. The proximal Amnio Viewport and/or distal visualization "stripe" allows assessment of the color of the amniotic fluid.

INTRAPARTAL AMNIOINFUSION

Intrapartal amnioinfusion is a technique that allows the replacement or augmentation of amniotic fluid inside the uterine cavity of the laboring patient. A physician's order should be received and recorded prior to the amnioinfusion which specifies the size of the initial bolus (250 ml. is typical) and the rate of infusion thereafter (60 ml. per hour is typical, with a maximum usually of 180 ml. per hour). The physician may determine amniotic fluid volume by ultrasound after the initial bolus. The physician should also determine the duration of this treatment that is consistent with the clinical situation, its urgency and any adverse responses observed in mother and/or fetus.

A description of the procedure, which includes all equipment to be used, all procedural steps to be taken, and all potential benefits and complications, should be clearly presented to the laboring patient, and her verbal consent should be obtained prior to the implementation of the procedure.

Prior to beginning the amnioinfusion procedure, it is best to assess and record the following:

- **Fetal heart rate information**
- **Uterine activity, including resting tone on right side, left side, and in a semi-Fowler's position.**

INDICATIONS FOR USE OF AMNIOINFUSION INCLUDE:

- **Oligohydramnios or premature rupture of the membranes**
- **Variable fetal heart rate decelerations that persist or worsen in spite of maternal repositioning, an IV bolus, and oxygen administration.**

CONTRAINDICATIONS FOR USE OF AMNIOINFUSION INCLUDE:

Conditions of the mother and/or fetus that mandate expeditious delivery. These include but are not limited to maternal hemorrhage, obstructed labor, fetal malpresentation and a nonreassuring fetal status that requires delivery.

Amnioinfusion uses either sterile normal saline or lactated Ringer's solution as designated by hospital protocol or by physician order. The INTRAN® PLUS, with its dual lumen design, offers the ability to amnioinfuse while continuously monitoring intrauterine pressure. The fluid infusion is typically controlled by an infusion pump through the INTRAN® PLUS amnioinfusion port.

At higher rates of infusion, warming of the fluid (not to exceed 42°C) using an infusion pump or blood warmer may be necessary to prevent fetal hypothermia which would be evidenced by fetal bradycardia. Care should be taken to maintain sterile conditions to prevent infection of the patient. Also, the mother and fetus should be carefully monitored throughout this procedure for the following warning signs of uterine overdistention:

- **an increase in resting tone**
- **iatrogenic polyhydramnios with possible cord prolapse**
- **sudden appearance of blood in the fluid (from uterine rupture or abruptio placentae)**
- **maternal respiratory distress**

In an effort to detect the above potential complications, the following continuing assessments should be made:

- **Fetal heart rate pattern every 15 minutes during active labor.**
- **Uterine resting tone every 30 minutes during active labor.**

RECOMMENDED PROCEDURE (MONITOR ZEROED PRIOR TO CATHETER INSERTION):

Catheter Preparation

1. Gather necessary supplies: INTRAN® PLUS cable, unopened INTRAN® PLUS package, infusion fluid with IV tubing (if amnioinfusion is to be performed), infusion control device and sterile gloves.

2. Turn the fetal monitor ON.

3. Connect the reusable INTRAN® PLUS cable to the uterine activity port of the fetal monitor (Figure 5).

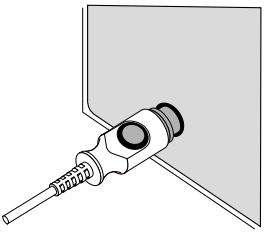

Figure 5. Cable connect to EFM

4. Peel back the end of the INTRAN® PLUS package to expose the connector that will attach to the cable.

5. Connect the INTRAN® PLUS to the cable (Figure 6). Caution: All electrical connections should be kept dry and clean.

Figure 6. Cable connect to INTRAN® PLUS

6. By zeroing prior to insertion, atmospheric pressure becomes the zero reference point. This can be accomplished as follows:

a. For INTRAN® PLUS IUP-400, IUP-450, IUP-500 and IUP-550 catheters, the zero switch (located on the amnioinfusion port) is in the open position when the INTRAN® PLUS is removed from the package (Figure 7). WITHOUT sliding the blue zero switch, zero the monitor as per the monitor manufacturer's instructions (usually achieved by pressing the appropriate monitor button (e.g., UA ref.) or by turning the "toco/IUP" dial until the display reads "0").

Figure 7. Zero switch in open pos.

b. For INTRAN® PLUS IUP-600, IUP-650, IUP-700 and IUP-750 catheters, WITHOUT depressing the zero button in the reusable interface cable, zero the monitor as per the monitor manufacturer's instructions (usually achieved by pressing the appropriate monitor button (e.g., UA ref.) or by turning the "toco/IUP" dial until the display reads "0").

7. Using aseptic technique, remove the INTRAN® PLUS catheter from the package. If amnioinfusion may be performed, prime the Amnio View port (if the model has one) and lumen with infusion solution prior to insertion.

8. Perform a vaginal exam and with the index finger of the examining hand, palpate the fetal presenting part to determine the optimal position for catheter placement. For greatest insertion success, find a position where a pocket or space presents itself. To help relieve the pressure caused by the presenting part, you might try elevating the patient's hips on an overturned, covered bedpan. If no opening is evident, anterior insertion may be attempted, taking care to guide the catheter between the inserting fingers (see steps #9-14).

Catheter Insertion

9. **Following the rupture of the amniotic membranes, adequate cervical dilation, and the pelvic examination mentioned above, insert INTRAN® PLUS.**

10. Insert the introducer and the catheter through the vagina into the cervix, **but not beyond the internal cervical os**. Secure the introducer between the examining fingers and adjacent to the fetal presenting part (Figure 8). **Do not extend the introducer beyond fingertips.**

11. Unless clinical assessment of uterine size indicates insertion to the first mark at 30 centimeters, advance INTRAN® PLUS until the second mark, the 45 centimeter marking, is at the introitus (Figure 9). This marking indicates that the tip of the catheter has progressed 30-35 centimeters into the uterus and should be positioned at the fundus of the uterus. If catheter placement does not proceed easily:

a. alter catheter direction by slightly changing the angle of the introducer, or
b. determine an alternate position for catheter placement and proceed with catheter insertion.

12. If using a configuration of INTRAN® PLUS with amniotic fluid visualization capability, confirm placement of the IUPC by observing either: 1) the color of amniotic fluid in the clear amniolumen or 2) removing the non-vented cap from the Amnio Viewport and observing the color of amniotic fluid that enters the viewport. **Note: The design of the INTRAN® PLUS catheter tip with transducer recessed in a soft, blunt boot enables the transducer to accurately convert intrauterine pressure even when the tip of the catheter is in contact with maternal or fetal tissue.**

13. Following insertion of INTRAN® PLUS, carefully slide the introducer back along the catheter. Holding the serrated tab of the introducer in one hand, lift the catheter out of the introducer with the other hand, thus peeling the catheter away from the guide (Figure 10).

Figure 8. Holding the introducer

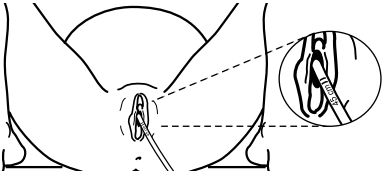

Figure 9. Second mark at introitus

Figure 10. Peeling away the introducer

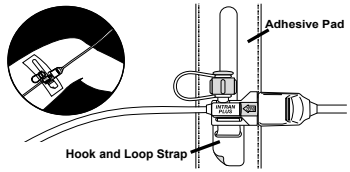

Figure 11. Securing INTRAN® PLUS to patient

14. To secure the INTRAN® PLUS, remove the paper from the adhesive pad. Adhere the pad to the patient's thigh or abdomen, whichever is more comfortable. Secure the hook and loop strap attached to INTRAN® PLUS to the adhesive pad. Adjust the hook and loop strap as desired (Figure 11).

15. Document the insertion time and who inserted the INTRAN® PLUS. Observe the contraction waveform. Encourage the patient to cough, and watch the recording to observe a spike to confirm optimal placement and function of INTRAN® PLUS. Record intrauterine resting tone, peak intrauterine pressures and contraction frequency and duration. Consider recording baseline resting tone when the patient is on her right and left sides and in a Semi-Fowler's position. If no spike or uterine activity waveform appears, reassess placement of the INTRAN® PLUS in the uterus.

Rezeroing of Monitor

16. In the event of a change in monitors after catheter insertion, rezeroing the new monitor while the catheter is in utero may be necessary. This rezeroing can be accomplished as follows:

a. For INTRAN® PLUS IUP-400, IUP-450, IUP-500 and IUP-550 catheters, move the zero slide switch (located at the amnioinfusion port) to the forward (closed) position (Figure 12), and zero the monitor as per the monitor manufacturer's instructions. Return the zero slide switch to the original "open" position following completion of the zeroing procedure (Figure 13). When the slide switch is back in the original "open" position, the black lines under the switch should be covered.

b. For INTRAN® PLUS IUP-600, IUP-650, IUP-700, and IUP-750 catheters, depress and hold the zero button in the reusable cable (Figure 14) while zeroing the electronic fetal monitor as per the monitor manufacturer's instructions. Release the zero button on the reusable cable after the monitor has been rezeroed.

Figure 12. Zero switch in closed position

Figure 13. Zero switch in open position

14. Zero button in reusable cable

After rezeroing, if a negative pressure reading occurs, the zero switch or button was not properly engaged. Rezero again following the above procedure, holding the zero switch in its forward position, or holding the zero button down in the reusable cable.

ALTERNATIVE PROCEDURE (MONITOR ZEROED AFTER INSERTION):

Catheter Preparation

1. Gather necessary supplies: INTRAN® PLUS reusable cable, unopened INTRAN® PLUS package, infusion fluid with IV tubing (if amnioinfusion is to be performed), IV controller device, and sterile gloves.

2. Turn the fetal monitor **ON.**

3. Connect the reusable INTRAN® PLUS interface cable to the uterine activity port of the fetal monitor (Figure 15).

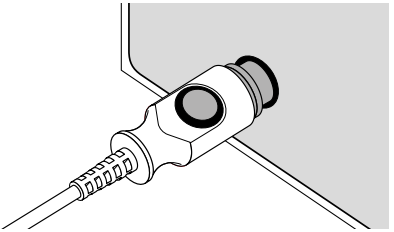

Figure 15. Cable connect to EFM

4. Open the INTRAN® PLUS package.

5. Don sterile gloves.

6. Using aseptic technique, remove the INTRAN® PLUS catheter from the package. If amnioinfusion is to be performed, prime the Amnio View port (if the model has one) and lumen with infusion solution prior to insertion.

7. Perform vaginal exam and with the index finger of the examining hand, palpate the fetal presenting part to determine the optimal position for catheter placement. For greatest insertion success, find a position where a pocket or space presents itself. To help relieve pressure caused by the presenting part, you might try elevating the patient's hips on an overturned, covered bedpan. If no opening is evident, anterior insertion may be attempted, taking care to guide the catheter between the inserting fingers (see steps #8-13).

Catheter Insertion

8. **Following the rupture of the amniotic membranes, adequate cervical dilation, and the pelvic examination mentioned above, insert INTRAN® PLUS.**

9. Insert the introducer and INTRAN® PLUS through the vagina into the cervix, **but not beyond the internal cervical os**. Secure the introducer between the examining fingers and adjacent to the fetal presenting part (Figure 16). **Do not extend the introducer beyond your fingertips.**

10. Unless clinical assessment of uterine size indicates insertion to the first mark at 30 centimeters, advance INTRAN® PLUS until the second mark, the 45 centimeter marking, is at the introitus (Figure 17).This marking indicates that the tip of the catheter has progressed 30-35 centimeters into the uterus and should be positioned at the fundus of the uterus. If catheter placement does not proceed easily:

a. alter catheter direction by slightly changing the angle of the introducer, or
b. determine alternate position for catheter placement and proceed with catheter insertion.

11. Following insertion of INTRAN® PLUS, carefully slide the introducer back along the catheter. Holding the serrated tab of the introducer in one hand, lift the catheter out of the introducer with the other hand, thus peeling the catheter away from the guide (Figure 18).

12. To secure the INTRAN® PLUS, remove the paper from the adhesive pad. Adhere the pad to the patient's thigh or abdomen, whichever is more comfortable. Secure the hook and loop strap attached to INTRAN® PLUS to the adhesive pad. Adjust the hook and loop strap as desired (Figure 19).

Figure 16. Holding the introducer

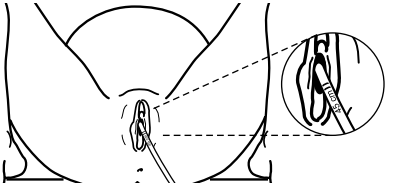

Figure 17. Second mark at Introitus

Figure 18. Peeling away introducer

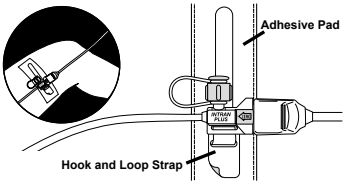

Figure 19. Securing INTRAN® PLUS to patient

13. Connect the INTRAN® PLUS to the cable (Figure 20).

14. To zero the system:

a. For INTRAN® PLUS IUP-400, IUP-450, IUP-500 and IUP-550 catheters, slide the zero slide switch (located at the amnioinfusion port) to the "closed" or forward position (Figure 21) and zero the monitor as per the monitor manufacturer's instructions. Return the zero slide switch to the monitoring or "open" position following completion of the zeroing procedure (Figure 22). This procedure "zeros" the monitor exclusive of the catheter tip. Note: the black lines under the switch are covered.

b. For INTRAN® PLUS IUP-600, IUP-650, IUP-700 and IUP-750 catheters, depress and hold the zero button in the reusable interface cable while zeroing the monitor as per the monitor manufacturer's instructions. This procedure "zeros" the monitor exclusive of the catheter tip. After the monitor has been zeroed, release the zero button on the reusable cable.

Figure 20. Cable connecting to INTRAN® PLUS

Figure 21. Zero switch in closed position

Figure 22. Zero switch in open position

15. Document the insertion time and who inserted the INTRAN® PLUS. Observe the contraction wave form. Encourage the patient to cough, and watch the recording to observe a spike to confirm optimal placement and function of INTRAN® PLUS. Record intrauterine resting tone, peak intrauterine pressures, and contraction frequency and duration. Consider recording baseline resting tone when the patient is on her right and left sides and in a Semi-Fowler's position. If no spike or uterine activity waveform appears, reassess placement of the INTRAN® PLUS in the uterus.

Rezeroing the Monitor

16. In the event of a change in monitors after catheter insertion, rezeroing the new monitor while the catheter is in utero may be necessary. This rezeroing can be accomplished as follows:

a. For INTRAN® PLUS IUP-400, IUP-450, IUP-500, and IUP-550 catheters, move the zero slide switch (located at the amnioinfusion port) to the forward (closed) position (Figure 21), and zero the monitor as per the monitor manufacturer's instructions. Return the zero slide switch to the monitoring or "open" position following completion of the zeroing procedure (Figure 22). When the slide switch is back in the original "open" position, the black lines under the switch should be covered.

b. For INTRAN® PLUS IUP-600, IUP-650, IUP-700 and IUP-750 catheters, depress and hold the zero button in the reusable cable while zeroing the monitor as per the monitor manufacturer's instructions (Figure 23)

23. Zero button on reusable cable

MONITORING PROBLEMS AND SOLUTIONS

PROBLEM 1:
The monitor is rezeroed after insertion into the uterus, which results in a slightly negative resting tone pressure reading, e.g., -2 mm Hg.

SOLUTION:
Slightly negative resting tone readings after rezeroing are possible under the following conditions:

- Zero switch or button was not fully engaged when the monitor was rezeroed. Repeat zeroing procedure, making sure zero switch on catheter or zero button on reusable cable is held in place when the monitor is rezeroed.

- The catheter tip (which contains the pressure transducer) has been positioned either at the very top of the uterus (fundus) or above any amniotic fluid pocket, so the hydrostatic head pressure is zero.

- When at rest, the force exerted by the uterus (resting tone) is on the low end of what would be considered normal, e.g., 4-5 mm Hg.

When the monitor is rezeroed, the transducer "offset" (allowable variance from a perfect balance) could be a slight negative value. Under the above mentioned conditions, when the rezeroing procedure is completed, this "offset" value might lower the overall resting tone to a value that is slightly less than zero. This situation can be avoided by zeroing the monitor prior to catheter insertion, which will always result in a positive resting tone pressure. A large negative reading can only result if the zeroing slide switch or zeroing button is not properly engaged, or if the electronics in the monitor are out of calibration.

PROBLEM 2:
As labor progresses, the resting tone readings may begin to steadily increase with no change in patient position. This may be a particularly troubling situation if labor has been induced with oxytocin, due to the possibility of the patient developing a hypertonic and/or hyperstimulated uterus as a result of too high a dosage or a very sensitive uterine response.

SOLUTION:
If the intensity of the contractions (peak intrauterine pressure minus resting tone) remains relatively constant, then the likelihood of a tachysystolic uterus is low, since the contraction pressure and resting tone pressure have elevated equally. The increase would be more likely attributable to one of the following:

- The INTRAN® PLUS is entangled with the fetus descending through the birth canal as active labor progresses. The hydrostatic pressure (weight of fluid above the transducer) may increase as the INTRAN® PLUS and fetus move downward, thus increasing both the resting tone and the peak contraction pressure.

- An amnioinfusion procedure is underway, which is slowly increasing the amount of fluid inside the uterus. Due to increasing amounts of fluid above the INTRAN® PLUS transducer, the resting tone and the peak contraction pressure both would steadily increase.

PLEASE CONTACT YOUR INTRAN® PLUS CLINICAL PRODUCT SPECIALIST WITH ANY QUESTIONS.

UTAH MEDICAL PRODUCTS, INC.
7043 South 300 West
Midvale, Utah 84047
USA
(801) 566-1200
(800) 533-4984 Toll Free

PN: 5820
REV: 032321