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THIS ISSUE.....

Guest Editor:

Laurence S. Baskin, M.D.

Neonatal Torsion: Immediate Surgical Exploration versus Conservative Management

- ♦ *Anesthetic Risks in
the Newborn*
- ♦ *Litigation*
- ♦ *Case Presentations*
- ♦ *Surgical and Management
Questions*

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Neonatal Torsion: Immediate Surgical Exploration versus Conservative Management

FROM THE GUEST EDITOR

Laurence S. Baskin, M.D.

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Neonatal torsion remains a controversial topic in pediatric urology. At the meeting of the Society of Pediatric Urology in San Francisco in May, a panel of experts was convened to debate the pros and cons of immediate surgery versus observation. Dr. Alan Retik has taken the position of immediate operative intervention. Dr. Howard Snyder has championed a non-operative approach unless an acute process can be demonstrated. Dr. Claire Brett addressed anesthetic issues in the newborn and Mr. Tom Donnelly addressed legal issues. Dr. George Kaplan moderated the session and prepared case examples for our panel of experts. I hope you enjoy the Dialogues from our experts on the controversies of neonatal torsion.

FROM THE EDITOR

Anthony A. Caldamone, M.D.

Dr. Baskin has synthesized a panel discussion moderated by Dr. George Kaplan, which took place at the recent Society for Pediatric Urology meeting in San Francisco. What is unique about this panel is that it is truly multidisciplinary, incorporating the reports of two practice urologists, a pediatric anesthesiologist, and a knowledgeable medical attorney. As you read through the discussions, there are many factors to consider in approaching the newborn with testicular torsion and if there is a single message that rings clear, it is that each case should be considered individually and all risk factors, both patient related and staff related, need to be considered. Dr. Baskin, Dr. Kaplan and his panel should be commended for such a broadly focused approach to this controversial topic.

THE PANEL

GK: George Kaplan, M.D., Clinical Professor, Departments of Surgery and Pediatrics, Chief of Surgery, Children's Hospital of San Diego

CB: Claire Brett, M.D., Professor of Anesthesia, UCSF Children's Hospital

AR: Alan Retik, M.D., Professor of Urology, Harvard University, Chief of Surgery, Children's Hospital of Boston

HS: Howard Snyder, M.D., Professor of Urology, University of Pennsylvania, Children's Hospital of Philadelphia

TD: Thomas Donnelly, J.D., Walnut Creek, California

The Problem

GK: The literature reports over 200 cases of torsion in the newborn period. The incidence could be as high as 1:7,500 based on the literature, but that is not a well-supported statement. The reason that it occurs in most instances is that there are loose attachments between the dartos and the tunica vaginalis that persist during the first four to six weeks of life. Ten percent of the cases are supposedly bilateral and can occur synchronously, that is, at the same time. A lot of the cases occur before or during birth. Most of the patients, interestingly, are above average in birth weight. There is no predilection for one side or the other. Pain is not a prominent part of the picture. Salvage of the testis is very rare, and there is an increased risk of anesthesia in the newborn. Controversy exist as to whether newborns with a diagnosis of testis torsion, even when it is well documented, should have immediate surgical exploration versus a more conservative approach, since the testicular salvage rate is extremely low.

Anesthetic Risks in the Newborn

CB: I will start by presenting data from the last 50 years relevant to what has been called “increased risk of anesthesia in the newborn”. Developmental factors related to cardiorespiratory, renal, hepatic, and neurologic immaturities are of paramount importance when talking about the newborn.

I have a lot of respect for newborns. I propose that when considering surgical care for the newborn, we must analyze pre- and post-operative care as well as intra-operative management. Significant morbidity is associated with both inadequate pre-operative assessment and post-operative supportive care. The infant, in many ways, and the newborn in particular, is a distinct species, and variability and unpredictability characterize his clinical performance.

The first report of increased anesthetic mortality in younger-aged patients was published by Beecher and Todd in 1954, who compared <

10 year olds with adults. In 1961, another report noted that the incidence of cardiac arrest was 16.2/10,000 in <1 year olds and 6/10,000 in >1 year olds. Over the next 40 years, many other investigators have documented that critical events such as cardiac arrest, bradycardia, respiratory events, are all higher in newborns and young infants than in older children and adults. On the other hand, even though the morbidity associated with anesthesia is higher for infants, the incidence of critical events is remarkably low. Recently, Jeff Morray, in conjunction with the Committee and Professional Liability, American Society of Anesthesia and the American Academy of Pediatrics, examined the incidence of cardiac arrest associated with anesthesia in a multicenter study, which included 63 sites, most of which were university affiliated [Pediatric Perioperative Cardiac Arrest (POCA) Registry]. Over three years he identified 150 of 289 cardiac arrests that were anesthesia related. All 39 deaths in this group of 289 were associated with severe underlying disease. Of note, over half of the cardiac arrests that occurred in healthy children (ASA 1 and 2) were medication related, that is usually a halothane overdose or some mismanagement with respect to medication was associated with the cardiac arrest. But the only predictors of mortality secondary to the arrest were ASA status and emergency surgery. These cases were different from the cases of malpractice. These are different from those from closed claims cases. The POCA registry is a self-reporting format and the entry criteria includes cardiac compressions, excluding other critical events such as those related to ventilation or intubation problem. Notice that, as in earlier studies, the rate of this event was higher in the younger infants but, overall, the incidence was low: $1.4 \pm 0.45/10,000/\text{year}$. Forty-three percent of these patients were <5 months old and 55% were <1 year. The low incidence occurred in tertiary care centers with pediatric anesthesiologists, not community hospitals without pediatric-trained anesthesiologists.

In short, the surgeon must tell the anesthesiologist whether he needs to go forward and operate on this patient. If a pediatric anesthesiologist who takes care of newborns is available, I can tell you that that infant will have a low chance of having a poor anesthetic outcome. From an anesthesiologist perspective, Charlie Cotes said “We are left with the best clinical judgment about an individual patient undergoing a specific procedure for a specific duration of time by a specific surgeon, and we are stuck with doing that every day in the operating room.”

Here is a summary of what I think happens over the first year of life. Over the first week of life, a newborn becomes much more stable with respect to glucose, calcium, liver function and temperature. These may seem like relatively minor issues, but for the first week of life, these metabolic problems are common in “sick” newborns and can be associated with significant morbidity if not adequately and promptly recognized and treated. In general, such metabolic problems are not encountered in the normal newborn that readily establishes feeds. On the other hand, a newborn headed to the operating room may need to rely on intravenous therapy. A normal one-week old infant is a much different than a 1-hour old newborn. Glucose is not a major problem for most normal newborns that are appropriate-for-gestational age, who are not septic, and who are eating. Certainly by a week, metabolic problems such as hypercalcemia and hypoglycemia have subsided, and body temperature regulation has stabilized. The newborns’ answer to everything is apnea: if they are cold, if they are hypoglycemic, if they are hypocalcemic, they stop breathing. Thus, the surgeon should meticulously analyze the entire perioperative site (pre- and post-operative) to ensure expert care for a newborn. In particular, after anesthesia and surgery, a newborn may be particularly fragile especially if pain medications or mechanical ventilation are required.



Extravaginal left testis torsion, explored inguinally

Other issues to consider:

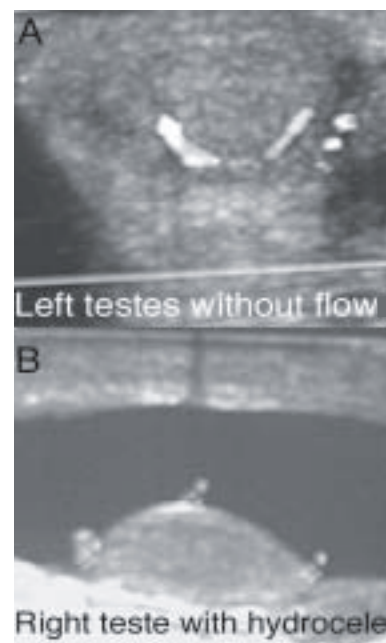
1. The transitional circulation is a potential source of morbidity during the first days to weeks of life, depending on the particular patient.
2. Transition from hemoglobin F to A occurs over the first three or four months and physiologic anemia is most significant at 2-3 months of age.
3. Cardiovascular (beyond the transitional circulation) and renal adaptation continue well past a year.
4. Transepidermal water loss is a major problem for premies. It is not a problem for term babies.

Some morbidities are “hidden” in newborns. For example, a patient with an interrupted aortic arch may appear healthy at birth, as long as the ductus arteriosus is patent. At 2-3 weeks of age, such an infant may come into the emergency room in cardiovascular collapse, as flow through the ductus decreases. My point about congenital anomalies is that at least for the first several weeks, if not months of life, there are hidden mortality and morbidity that may not be apparent. Again, if a newborn is subjected to surgery and anesthesia, he requires meticulous pre-operative assessment and postoperative supportive care by experts in neonatal medicine and surgery.

Litigation

TD: I know there is a sense among physicians that any patient or parent of a patient is a potential plaintiff. Although I hope you are not practicing medicine on a daily basis thinking any complication is going to get you sued, there is a sense among many physicians that that is indeed the case. From the plaintiff’s attorney’s perspective, although anybody can sue, even in those states where they have screening panels, although they are desired to weed out bad cases, are really not very effective. The objective though, from the plaintiff’s attorney’s perspective is simply to make money. They do not care where the money comes from as long as they get some. Their job, if they look at a case, is to decide preliminarily is this a case that is worth my time and my money? Am I going to get something out of it? Many capable plaintiff’s attorneys will reject an enormous number of cases before they take a case because, if they know what they’re doing, taking a poor case they know is going to result in a tremendous expenditure of money and time on their part. Their job, ultimately, is to make the risk of going to trial in order to defend yourself so high that you will settle the case. Many plaintiff’s attorneys really don’t want to go to trial, but they will unless they can get some money from you, and they operate with the retrospect scope always cranked up to full power.

With respect to neonatal testicular torsion or any type of testicular torsion, when some layperson, i.e. juror, hears about losing a testicle, they think it is a catastrophic injury and it often is, particularly if it is bilateral. There are steps that can be taken to minimize the risk of getting sued. Keep in mind, the standard of care is really defined as reasonable medical care under the circumstances, which sounds perfectly logical, but it gets distorted. If any of you have been through lawsuits and seen plaintiff’s experts, even in cases that you thought were handled well, in retrospect they can say almost anything. Believe me when I tell you the parents of a child who has experienced the loss



Doppler flow ultrasound of left testis torsion - No flow to left testis

of a testicle, without question, always testify that I wanted that physician to do anything and everything that he or she could do under the circumstances to save my child’s testicle, to make my child well, to avoid my child getting worse. It is very difficult if the charting is poor or if you don’t have good communication with the parents in discussing any illness or complication. Your chances of getting sued go up dramatically. There is a good-sized body of medical literature that talks about the effectiveness of communication. Patients will accept a lot of complications if they truly believe that their physician is working with their best interest or their child’s best interest in mind. I think communication, being available to discuss things with the family to help them understand what is going on is really the key to avoiding getting sued. A final point: in areas like neonatal testicular torsion where there are controversies on treatment or management, one has to be particularly careful if you favor one option that you don’t just focus on that option. The law is very clear as part of informed consent that you need to discuss the risks, benefits, complications and in most states, in fact in California it is separate legal doctrine, its called the informed refusal. In discussing options with a parent, even if you strongly believe in one avenue of diagnosis, treatment or management, you have to, and you’re crazy if you don’t, explain to the family that there are other ways of managing this that other reputable physicians might prefer. This makes informed consent a legal fiction in many ways because, you’ve all seen it (probably on a weekly basis): the more information you give a parent in a complex medical situation, the more confused most of them become and the end result is “Well doctor, what would you do?” So you are back to square one. If you establish a good rapport with the parents, explain what is going on and help them understand exactly what’s happening to their child, and you document the heck out of that, you can avoid a lot of potential law suits and you will have a much greater opportunity to defend yourself if, God forbid, you get sued.

Case Presentations

GK: The first patient is a 3.5 kg term infant, delivered vaginally two days ago. He has an enlarged, firm left testis noted at the time he was born. Somebody wrote an order for a urology consult, but they did not transcribe it until today, so now you are called. Dr. Howard Snyder, what would you do?

HS: The approach that John Duckett and I have followed in Philadelphia from the time I joined him in 1980, is that if there is no sign of an acute process, no intervention is needed. I have summarized the facts concerning antenatal torsion in the table below. I have seen torsion in an infant that was acute and, of course, it goes through the phase of venous congestion, swelling, and it's tender to touch. In that situation, emergency surgery is appropriate. In contrast, if we pick up antenatal torsion with a typical painless dark testis without acute changes in the scrotal wall, we would just observe the child along with a careful discussion with the family of the very small but present risk of an asynchronous, postnatal torsion on the other side. Parents change baby's diapers multiple times a day. I tell them to poke the other side of the scrotum. If the child is just as happy as he is now, you do not have anything to worry about and after a few weeks, it is the end of the issue.

One of the things that has not been in the literature and is very important, is the issue of long-term risk to the contralateral testicle. After all, an antenatal torsion is not a rare problem at all. Five percent of the two percent of boys with a testis out of the scrotum have an absent testis ("Vanishing Testis"). Usually a hemosiderin containing nubbin of scar tissue is found with varying amounts of infarction also of the spermatic cord. These findings are the result of antenatal torsion of the testis. What is rare is to actually feel a testis. Antenatal torsion is

common. If that carried a late risk to the other testis, all of us should be seeing one ball boys that are undergoing torsion at the typical age that we see torsion in the 8 to 14 age group. Basically, that is something that does not happen. I've never been able to find someone who has seen that clinical situation. So in a sense, if you've lost a testis because of torsion before birth, it has a protective effect on your other testis. We explain this to families, explain the anesthetic risk articulated by Dr. Brett and tell them that based on our judgment, what we would do for our own kids, is not operate on a child like this. We recommend that for the next few weeks to poke the kid's other side of the scrotum each time you change the diaper, and we give them emergency numbers to our practice should anything suspicious arise. In the joint practice of John Duckett and myself from 1970 when John came to Philadelphia, we have more than 50 years collective experience in a catchment area of somewhere between 17 and 19 million people and we have yet to be burned with this approach.

GK: Dr. Alan Retik what would be your approach to the same patient?

AR: I would operate on this baby. I would do prompt exploration of the involved side, and if it is a torsion as it most likely is, I would fix the contralateral side if the patient's condition and anesthetic considerations allow for this procedure. We reported asynchronous torsions as far as seven and eight weeks following neonatal torsions. I have to confess, and in this particular case we really don't know when this occurred, even if it occurred shortly or just at about birth, it probably would not be a salvageable organ. Marty Koyle's series from Denver of newborn torsions had a 40 percent salvage rate, which is the highest rate that I've seen. Others have reported a salvage rate of 20 percent, again much higher than I have seen in the past. We would operate on this child, knowing that we most likely would not salvage the testicle, but we would fix the contralateral organ.

I was a little more casual about this up until about ten years ago when I was called about 8 o'clock on a Sunday night about a baby who was at Brigham and Women's Hospital. They called our resident and said they had a baby with a scrotal mass. Our resident promptly evaluated the baby and said, "You know, I was just asked to see this baby. The baby is four hours of age. I think it is a torsion. The mom is a diabetic and had a Caesarian section. The baby is healthy but is in the neonatal intensive care unit." I said "We know that we've had asynchronous torsion at our institution. I think we should explore this baby, confirm the torsion and perform a contralateral orchipexy, but I don't think it is really an emergency and if the mom is going to be in for three or four days, we can do it sometime in the next few days, but I do think we should do it." Well, the resident called me back four hours later. It was about midnight, so the baby was about eight hours of age, and said, "You know, they just called me again and they think there is a mass on the other side... I think its torsion." I said "Why don't you schedule the operation and call me when we're all set." I would assume it would have been done within an hour or two. Well, its not very easy getting permission at midnight, getting the approvals of the neonatal intensive care people. Mother wanted to speak to her father, who is a physician in another state. Mom was a diabetic and before we could get anything done, it was about four in the morning. Getting the baby just over a bridge and into the operating room was difficult. The baby was operated on at about age 12 hours. I explored the first side and it was obvious that it was a nonviable organ. I explored the other side and I thought

Antenatal Torsion Facts

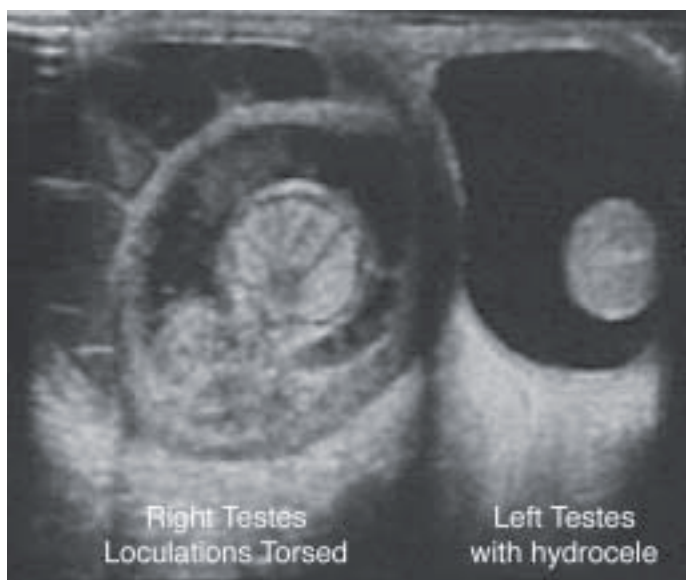
- ♦ Antenatal torsion is not rare - Testicular agenesis occurs in 5% of patients with UDT, most thought to be caused by antenatal torsion.
- ♦ A palpable testis is rare
- ♦ Postnatal exploration – Salvage rate infinitesimal

Antenatal Torsion Presentation

- ♦ Non Acute - Typical neonatal presentation
 - Dark scrotum
 - Painless
 - Little scrotal wall changes
- ♦ Acute Neonatal Torsion
 - Swollen
 - Tender
 - Edema/erythema of scrotal wall

- ♦ Torsion does NOT occur in boys with one testis

NO ACUTE CHANGES - NO OP
ACUTE CHANGES - EMERGENCY OP



Ultrasound testes: Right loculations around a torsed testis. Left hydrocele with normal testis

it was of questionable viability. It was obviously a fresher process than the first side. In this instance, I untwisted them and I bathed them in warm saline and I put both of them down. Neither survived. So I was sued in this particular case and it was a highly emotional-type of suit and the claim was that if I would have operated on the baby when the baby was four hours old, I might have saved the contralateral organ. I thought the case was handled very well; the records were superb.

In regard to Howard Snyder's statement about having parents check the diapers, let me give you a patient example. Recently, I saw a child in the office that had presumed neonatal torsion. I saw the baby when he was about two weeks old and I said to the father that we should really do this in the next week or so. I told the father to observe the baby and have the mom observe the baby during every diaper change. He said, "Well, what happens in the middle of the night?" Well, the father was an attorney and you know when that child was operated on? Three hours later. I took him right to the operating room. I think that the practicality of having parents observe the babies in this regard is not satisfactory.

GK: Mr. Donnelly, do you have any comments?

TD: I'm sure you all find the prospect of having your medical care judged by people like those that show up on Judge Judy a truly frightening thought. Alan Retik's case illustrates exactly what happens when you are dealing with a condition, even though the salvage rates are miserable, the impression that one has not done everything that one can do under the circumstances is going to lead the parents and the plaintiff's lawyer, and maybe jurors, to conclude that you just weren't on top of it. You weren't aggressive enough and when the outcome is bad, it's very difficult to go back and recreate things exactly the way it was at the time because the end result, which is known to everybody by the time it goes to trial, makes everything else in retrospect look like you went down the wrong fork in the road. If you can have cases like this with good documentation, with excellent physicians involved, and the mock jury says well, you're going down the tubes very quickly, it's a plaintiff's

gold mine, and I'm not so sure you could have done anything that really would have changed the result, but the risk of going to trial, at least in the eyes of your risk management people, outweighed the settlement.

GK: The child presented as the first case was operated on. Findings were a typical extravaginal torsion. Contralateral orchipexy was performed.

This second case is a 3.6 kilo infant. He was delivered an hour ago, Cesarean section, Apgars are good, 8 and 10, but there is a firm and enlarged right testis, and you're called right now. What would you do Dr. Retik?

AR: With good pediatric anesthesia, if the patient's condition were stable even with an APGAR of eight, I would take this baby to the operating room immediately.

GK: Dr. Snyder

HS: Let me give you an analogy. If you operate on all of these children, then I think we'd have to also acknowledge that we need to take out every single multicystic kidney that we see because the likelihood of that child developing cancer in the multicystic kidney is at least as great as the risk to the contralateral testis in children who have had antenatal torsion. I just think it is illogical to operate urgently. Quite honestly a lot of what's in the literature is a reflection of a failure to understand that antenatal torsion is almost always an old process. Even in the newborn, an acute process causes acute changes and acute findings on an examination. Clearly then urgent surgery is appropriate.

To rebut the issue of what happens in the night. If a child were to develop torsion in the middle of the night, he wouldn't sleep through the night and a parent that has a screaming child waking them up in the middle of the night is likely to look at the scrotum, if that's what you told them to do. I think it is still defensible to do nothing surgical to these kids. I adhere to the basic principal that you should do what really can be rationally supported, and I think a rational review of pathophysiology does not support surgical intervention in these newborns with an old torsion.

GK: Dr. Brett, in this instance, if you were Dr. Retik's anesthesiologist and he wanted to whisk this baby right into the operating room, would the fact that the baby is only an hour old concern you and what would you do about it?

CB: I would talk to my neonatal colleagues. I would examine the baby and make sure there was no evidence of cardiovascular instability, no heart murmur, make sure the glucose and calcium were stable. I would do all the things that I do when I'm taking care of any newborn—one with diaphragmatic hernia, tracheo-esophageal fistula, and meningo-myelocele. I am respectful of newborns from the standpoint of their immaturity and their metabolic adaptation, but I know how to take care of newborns. I have acquired skills in adapting principles of cardiorespiratory physiology to clinical practice. I know how to put intravenous lines and endotracheal tubes. I know how to deliver fluids. I know how to check laboratory studies and I know the expertise of my intensive care nursery. I have no problem if a surgeon tells me that he needs to take a newborn to the operating room and our anesthesiologists have great working relationships with our pediatric surgeons, but I have

respect for my colleagues in a hospital that has less sophisticated backup. That's the situation I kept thinking about when I was reading these cases. What if I was at a good community hospital but one without a pediatric anesthesiologist or neonatal intensive care unit? Newborns are different. I have a lot of respect and concern about that setting as opposed to UCSF, where I'm protected at a big university with a lot of support systems around me and I take care of newborns routinely.

GK: Suppose somebody was out in that community hospital and wanted to refer to your institution, but it's going to take three hours to accomplish the transfer and get that kid into the operating room. Dr. Retik is saying that as the urologist in that community hospital, if I wait four hours, I'm going to lose any chance at saving this testis. What do you think now?

CB: Well, I can't personally go out and take care of the infant, but I've been in this community for a long time, so I know many of the anesthesiologists who practice out in the community. I could talk to an anesthesiologist in an outlying center. And, at certain times of the day and night, we can get a baby here in an hour. If you have to cross that Bay Bridge at 4 o'clock in the afternoon on Friday, it's going to take four hours. Each surgeon and anesthesiologist has to know your own community and the support systems with respect to transporting babies. If I were there, i.e., the community anesthesiologist on call, I would not want to take care of this newborn!

GK: I understand, that is exactly the point I wanted to make. So now, the local anesthesiologist is saying no, I don't want to take care of this baby and so we're going to move the baby from there, across the bridge, to UCSF. It's 4 o'clock in the afternoon and it takes four hours for that to happen.

CB: Better lose the testicle than lose the baby.

GK: Dr. Retik operates on that baby and the testis is lost. Now the parents go to Mr. Donnelly and they say, "You know, if they had done this in the local hospital, if that hospital had been equipped to do that like every hospital is supposed to be, we wouldn't have had this problem. I want to sue." What do you say, Mr. Donnelly?

TD: I would say that the law does not require you to accomplish the impossible. I tell you what would happen if they did that at the community hospital and had an anesthetic disaster, the argument would be just the opposite. What were these guys thinking about when the literature says six testicles have been salvaged throughout history? Are they out of their minds trying to take this young newborn to surgery when you are not going to salvage the testicle anyway? I would be comfortable saying if you tried to arrange to go to UC, you have to assess the risk, you have to keep the parents advised.

AR: Bilateral antenatal torsion is not rare. It does not necessarily occur before birth or occur absolutely synchronously, and accordingly what you see clinically when the baby is born may be different on the two sides. There are cases in the literature of what felt like a "normal testis" on the one side and the other side was obviously abnormal. The patient was operated on and the obviously abnormal testes was dead as a smelt, but then they operated to pex the other testis, only to find that it was black, but had involuted to the point where its size clinically mimicked



Inguinal exploration with extravaginal torsion right

that of a normal testis. I would caution you that when you see an antenatal torsion case, always look very hard and critically at the other side. I wrote the chapter on acute scrotum for the emergency room book from the Children's Hospital of Philadelphia for multiple editions, and I can't tell you how many legal cases I've been involved with as a result of defending doctors in torsion cases. You've got to be aware of the fact that bilaterality, as George Kaplan pointed out, may occur inasmuch as ten percent or more of these antenatal cases and you've got to evaluate the other side carefully or you may get blamed for something you did not possibly have an opportunity to favorably influence. Indeed, one of the cases that is reported from Boston, if you look at the pathology, falls into this category because it was recorded as one of the ones where there was an asynchronous torsion occurring after birth, and yet the testis that was taken out had dystrophic calcification, which indicates clearly it was not acute. So be aware of that because it is a real risk.

GK: The next case is a 3.4 kg infant. He was delivered vaginally at 10 a.m. yesterday and there is a good neonatal examination that says his testes were normal. At 8 a.m., the nurse notes that the left side is enlarged and slightly blue. You're called at 9 a.m. What do you do Dr. Snyder?

HS: If it is an acute process, operate. I would just say though that look carefully at what the physical findings are. If this is a tender testis, then you bet, but if its blue because the kid has a little hydrocele and the family and the nurse is seeing reflected light through the scrotal wall of the hydrocele, then obviously I would not operate on the patient. You need a little more physical examination than you are describing and I am presuming that there was an acute process on examination.

GK: That is what we are assuming, but I would challenge your statement that it is tender. Alan, do you think acute neonatal torsion is tender?

AR: Some of the very acute ones may be a little tender. For the most part, I haven't found them tender.

HS: George, let me just dwell on that. If you think of the pathophysiology of acute neonatal torsion, whether its intravaginal or extravaginal, the first thing that happens is venous outflow pressure is exceeded, so the reason you get swelling is because of venous congestion of the testis. That creates pain because that's the way the body works. It senses discomfort through the triggering of stretch receptors. That's not different in a newborn versus a ten-year-old.

AR: First of all, are we sure that it really is venous obstruction as opposed to arterial occlusion that causes the problem in newborns, because I don't think that's terribly clear. If it is arterial occlusion, I am not sure that it is painful. I turn to Dr. Brett and ask her in her experience whether or not she thinks that newborns always demonstrate the same levels of pain that we see in older children.

CB: They certainly have different ways of manifesting pain. I have done a lot of examinations on newborns, and if you examine a newborn's scrotum, they do not seem to mind. So I certainly can tell when a kid has tenderness associated with an acute type process. They may lift their legs and kind of have a Valsalva maneuver if I'm examining a belly, but if they're distended and have an acute process going, I can tell the difference between a newborn who has pain versus a newborn who just doesn't want to be bothered. They definitely have different ways of manifesting it, but newborns who have an acute event associated with pain, I personally can see the difference.

GK: For just a minute, lets go back to the other case where the baby was delivered by Cesarean section. It is an hour later. Now, I want to ask Mr. Donnelly, the father's not around and cannot be found. The mother is an hour postoperative from her Cesarean section, we have this baby, and we think it is an acute problem. Dr. Retik wants to operate on it and what are we going to do about informed consent?

TD: Legally, if it's a true emergency you don't need consent. If you can talk to the mother at all, I guess its unrealistic an hour after birth to think you're going to get much of anything out of the mother, I would suggest going to a different family member, anyone you can reach. If you can't reach anybody at all and you legitimately believe that there is potential benefit from going in and the surgery is not especially risky, I think what I would do is get a colleague there to see if that person concurs with your judgment and if you feel its an emergency, go do it.

CB: I have had C-sections. You can talk to a mother an hour out from a C-section. I'm not saying she would be totally lucid, but if you went to a mom an hour out from a C-section and told them there was an acute problem with the baby and you could not find the dad, I would suggest that is good enough.

GK: But legally, if there was a problem, couldn't she say "but I was narcotized, I really didn't understand what I was signing"?

CB: You document, document, document, and you do the best you can. Particular day with a particular patient with a particular surgeon. I am not a surgeon and I would not be making these decisions, but in a situation where you really think you can make a difference in the child's

care, you just do the best you can with the consent. If the consequence is greater than the risk of the anesthetic and going forward, then you just make the decision that day and do the best you can.

Just think of the flip side of that coin. You have a potentially salvageable testicle and you're defense is, well there was nobody to talk to. I knew what I should do, I knew what I wanted to do, I thought this was the one moment in time to fix this, but you know, the mom was groggy, etc. You know what the parents are going to say, "What are they doing... go fix my child." You are going to look better if you go ahead than if you sit around twiddling your thumbs.

GK: The next case is a 4 kg infant who was delivered vaginally two days ago. The baby had meconium aspiration and is on high-frequency ventilatory support, but otherwise is stable. It's not clear what the initial examination was, but today, somebody notices there are bilateral enlarged firm testes. What do you do? Howard?

HS: I would look at the physical examination and if it looked like this was an old process, I would probably not do anything to this baby. I do think bilaterality is pretty common and you just have to make families aware of that. It sounds to me like a tragic situation that nobody is going to be able to do much for.

AR: I have to remember what Mr. Donnelly said a few minutes ago that parents want you to do everything possible to salvage the testicles. I do not see a lot of bilateral neonatal torsions that I would not operate on. I really think that even under the circumstances, whether it is a local or spinal I would operate on this baby. I think this is the only possible way to save one or both testicles.



Right testis torsion - Note fixation of scrotal skin

CB: If this child is in a setting where he is receiving high-frequency ventilatory support, he is clearly in a high-level intensive care nursery. This one to me is a no-brainer. This newborn's trachea is already intubated, lungs ventilated, and cardiovascular system supported. A surgical procedure is not going to require much increase in support. He's probably already receiving sedation because he is receiving mechanical ventilatory support. The infant could receive a muscle relaxant, additional sedation, and a local block. This is almost an easier situation than some of the other cases discussed. It is actually the healthy kid, ASA 1, 2 child who may have an unrecognized congenital anomaly that I do not know about that scares me more than an infant already on maximal support. I don't even have to move this critically ill infant from the nursery. I'm not even going to transport him to the OR. I'm not even going to transport him back to the nursery. He's already supported. This one is easy. If the surgeons tell me that he needs an operation, I can stand there and monitor, titrate more sedation, etc., This case is actually the easiest to approach from an anesthetic standpoint.

GK: Well, that leads me into the last part of this panel, that is, now that we've batted this back and forth, do we have a consensus? Howard, have you moved any closer to the center. Alan, have you? Mr. Donnelly, what can you do to save us?

HS: Well, I'm about as likely to start operating on something where I'm not going to salvage the testis as I am to take out all multicystic kidneys.

AR: I have not changed my opinion. It is difficult to determine when a neonatal torsion occurs and you are not palpating a nubbin, but you are palpating a sizable firm organ, you really do not know when it occurred. Again, thinking about what Mr. Donnelly said and parents wanting everything possible to save the organ and again our experience with asynchronous torsions, although not very common, they do occur, I would still operate on them.

GK: Well, Mr. Donnelly, in this situation now, we have two distinguished experts who have opposite views. I would like for you at this time to put on your defense attorney hat and tell us how you would attempt to defend someone who took either of these positions.

TD: It would be much easier to defend the surgical approach because jurors expect your best efforts and they think the more you do, the harder you're trying, and they are more likely to interpret an attempt at salvage as the right thing to do than even a well-reasoned approach that if the testes are not salvageable, what are we doing, why are we creating any kind of increased risk to this neonatal patient when there is nothing to be accomplished? The problem, of course, is the literature that I looked at to prepare for this does suggest both views are valid. I think its going to be much easier for plaintiff's attorney to get an expert to criticize "There's nothing I can really do to change the situation" approach and it is going to be more difficult to attack a more aggressive approach. I saw one comment I thought that was particularly striking in one of the articles. I think it was addressing bilateral testicular torsion, even though the author seemed to suggest you know you're not going to really salvage anything, its reassuring to the parents to know that their surgeon is doing anything and everything he or she could do to see if there is any chance whatsoever.

You document, document, document, and you do the best you can. Particular day with a particular patient with a particular surgeon.

SAVE
THE
DATE

The SPU is pleased to announce that our
54th Annual Meeting
will be held on
Saturday, May 21, 2005
in San Antonio, Texas

This year we are especially pleased that we will be offering CME credits to our attendees.

For more details please visit our website:
www.spuonline.org

Surgical and Management Questions

LB: Dr. Kaplan, Retik and Snyder.

If you diagnose torsion in the newborn period how do you approach the testicular exploration and the contralateral orchiopexy, scrotal or inguinal? If the normal testes has a large hydrocele does that influence your approach?

GK: Scrotal; unless it clearly communicates.

AR: In general, I approach testicular exploration through an inguinal approach. This gives me more flexibility in case of a missed diagnosis. It will allow me to handle any type of problem such as an inguinal hernia and hydrocele. The contralateral orchiopexy is done through the scrotum.

HS: For an old torsion with a painless testis, I do no scrotal exploration at any time.

LB: **Do you have a cut off age when you consider the problem of extravaginal torsion to have subsided, for example six weeks or six months of age? Would you always do a contralateral orchiopexy in a solitary testis?**

GK: Six weeks; not as an isolated procedure.

AR: Although extravaginal torsion is primarily seen in neonates, we have seen it in older age groups and I will basically treat the contralateral testis in a similar fashion.

HS: I based the decision to recommend surgery on acute changes. If there are any acute changes at any age then an emergency operation would be performed including a contralateral fixation procedure. There is no difference in the pathophysiology of a newborn acute torsion from one later. There always is swelling, redness and tenderness. With these findings, clearly surgery is indicated urgently. This is very different from the typical presentation of antenatal torsion with an enlarged painless dark gonad with little or no changes in the overlying skin.

LB: **How do you handle bilateral neonatal torsion where both testes are non-viable? Do you administer early hormonal replacement therapy to simulate the normal post-natal testosterone surge?**

GK: Good thought, but I haven't done it.

AR: In the unfortunate baby with bilateral neonatal torsion, if there's a possibility of one or both of the organs having some viability, I will try to leave both in place. Controversy exists about early hormonal replacement. There is some variability in the approach of our endocrinologists.

HS: We have not administered post-natal testosterone and have followed several of these children into adult life and have not seen any evidence of any adverse sequelae from not having duplicated the two to three-month normal testosterone surge.

LB: **Is there a role for early childhood prosthesis for bilateral testicular loss? Is there any validity to the argument that scrotal "structures" reduces the psychological burden through their formative years in anorchic patients?**

GK: I think it's preferable for anorchic, but not for monorchic. I don't know if the argument is valid, but it make sense and the parents seem to cope better.

AR: Although I do not employ the use of prosthesis in unilateral testicular loss, I think it does make sense in bilateral situations. I do think it reduces the psychological burden through their early years.

HS: Tragically, bilateral antenatal torsion is not as rare as one would presume. When that diagnosis is established, it is our practice to place bilateral infant-sized testicular prostheses based on the belief that a little boy growing up with a flat perineum indeed does have body image issues that make the placement of the prostheses worthwhile. After pubertal induction, we then later change these prostheses to adult-sized ones. We would not make this recommendation for a unilateral absent testis, however.

FROM THE SPU PRESIDENT

David B. Joseph, M.D.

It is an honor for me to have the opportunity to serve as your president. This is a very exciting period for the SPU due to the great efforts of those who I follow. I happened to sneak in just at the right time. I think most of you recognize that the role of the president is mostly show and the real organization is run by the Secretary and administrative staff. We are very fortunate to have Marc Cendron working tirelessly to see that we maintain our agenda and accomplish our goals. The addition of Aurelie Alger and the staff from PRRI has also helped to strengthen our Society. The quality of their work and the service they provide is outstanding. We are fiscally sound due the fund raising effort of prior presidents and fortunately for me, that responsibility has been taken over by Jean Stasik and her "magic wand". With the above combination of individuals the SPU is on solid ground and moving forward.

The future of the SPU is based on its membership. While we have a strong foundation, it is apparent that we could be doing better and should strive to have all pediatric urologists affiliated with the SPU. There are many well-respected pediatric urologists, young and old who have not taken the opportunity to join. I ask you to seek out your partners and friends and encourage them to apply for membership. On our end, we need to show that they are associating themselves with a worth-

while organization. I think the upcoming events prove that to be true.

The "rebirth" of *Dialogues in Pediatric Urology* under the editorial direction of Tony Caldamone was a tremendous success. This second issue is expected to receive the same response. *Dialogues* subscriptions are provided to all members and included in your annual dues. Past issues will be archived and posted on the SPU web site. A subscription to *Dialogues in Pediatric Urology* can also be purchased by non-members. (The subscription form can be found on the SPU web site and on the opposite page.) Tony has worked

very hard creating an international editorial board. He has already organized over two years of subject matter with commitments from guest editors. Congratulations to Tony for an outstanding effort and continuing a special resource established by Rich Ehrlich and Bill Miller.

Mark your calendars! The SPU annual meeting in San Antonio will be held May 21, 2005. The program, planned by Warren Snodgrass, should be an outstanding educational experience. Warren is developing a panel on complex re-operative hypospadias procedures, a state-of-the-art lecture on hypospadias surgery, a panel on standards for urodynamics in infants, a point-counterpoint on surgical management of stones in prepubertal children, and a video forum on injection techniques for complex pediatric problems. And just when you think there will be a break, enjoy a lunch discussion related to Fellowship training. Because of the significance of this meeting, we are working with the AUA to obtain CME credit for the entire meeting. If successful, we expect CME credit to be continued in the future. This will become an important way to obtain specific pediatric CME credit that is expected to be required once a Certificate of Added Qualification is established. At the past AUA annual meeting, an honest attempt was made by the AUA to accept a greater number of pediatric abstracts. But, it did not occur without some pain. Many of you are aware of the logistical problem that was created resulting in the SPU meeting and AUA pediatric session running simultaneously and in vastly different locations. Alice Henderson, from the AUA Office of Education, has been working closely with us to see that this does not happen again. I'm very grateful for Alice's sincerity and understanding dealing with this issue. The San Antonio meeting won't be all work and no play; Elizabeth Yerkes, our social chair, is planning an entertaining evening for our annual banquet. The 2005 annual meeting will be one blockbuster you won't want to miss.

During a recent strategic planning meeting, the idea for a World Congress on Pediatric Urology was established, to be held either in 2009 or 2010 prior to the annual AUA meeting. We are interested in creating a program that would have global interest for pediatric urologists, nephrologists and radiologists. This concept is in the developmental stage. We will continually update you on its progress.

I'm looking forward to another great year for the SPU. Please feel free to contact me or anyone on the SPU Executive Council if you have comments, questions or concerns. Enjoy the remaining weeks of summer. I hope to see all of you in San Francisco for the AAP meeting. Rick Rink and Mark Adams have created a terrific agenda.



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INSIDE THIS ISSUE.....

- Neonatal Torsion: Immediate Surgical
Exploration versus Conservative Management**
- ♦ **Anesthetic Risks in the Newborn**
 - ♦ **Litigation**
 - ♦ **Case Presentations**
 - ♦ **Surgical and Management Questions**

Guest Editor: Laurence S. Baskin, M.D.