The Abdomen: The Complete Examination

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Presenter:
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Everyone involved in school nursing is familiar with the "frequent flyer," the student who visits often with complaints that are probably subjective and not visibly apparent. Perhaps one of the most common of such complaints is stomach ache. When the student is known to be a frequent visitor without apparent physical symptoms, it is easy to dismiss his complaints – easy, but potentially dangerous. The danger, of course, is that sometimes a real problem could also be dismissed. The purpose of this session is to equip school nurses to assess the abdomen of *any* student.

The first step in assessing the student complaining of stomach pain is to take the temperature. It will be one of the first questions asked by the doctor if the child is referred for treatment.

Examination of the abdomen, including palpation and percussion, is useful in assessing the problem. The nurse needs to be familiar with the location of all the organs in the abdominal cavity. A good book on physical assessment is very useful. (In a "hands on" session at the conference, participants located major organs and practiced examination techniques with partners.) Most nurses know where the larger organs are, but some are not sure about the smaller ones. The larger organs can often be palpated, but usually the smaller ones cannot. Furthermore, the small bowel usually lies in the pelvic cavity and cannot easily be palpated. Sometimes the large bowel can be palpated, and very often reveals the most frequent reason for pediatric patient visits to gastroenterologists – constipation.

The aorta lies at about the midline of the abdomen and should be considered along with the other organs in the abdominal cavity. Aortic aneurisms in children are rare but not impossible. (Never say "never" in nursing.) Most school nurses provide emergency care for the adults at school, too, and aortic aneurisms are more likely in the adult population. Sometimes we think that we are strictly listening for bowel sounds when auscultating, but that is not true. We need to listen also for vascular sounds. In children, especially thin children, it is possible to hear venous hums and sometimes bruits. This points up the second important tool for assessment, the stethoscope, which was discussed later in the session.

If a student complains of abdominal pain, ask the student to point to the site and describe the pain. Use the pain scale to assess the pain. Consider the possibility of appendicitis, which can appear differently in every child; some children experience referred pain rather than pain in the right lower quadrant.

The next step in assessing the abdomen is obtaining a good history. Start by asking questions about recent food intake – "Did you eat breakfast today?" and, if yes, "What did you eat?" Not eating is probably the most common cause of stomach ache. Another common cause is motion sickness from riding the bus. Inquire about both food intake and whether or not motion sickness could be a factor. Ask about vomiting. If the child did vomit, of course the next question must be, "Did a grown-up see it?" Keep in mind that some children complain of stomach ache but might be coming to the nurse for a completely different reason. They come to you because they feel safe and loved with you. If a child presents with a "stomach ache" over and over, it would be a good idea to have a conversation with the child about what else might be happening. Do not overlook the possibilities of abuse and sexual abuse. "Frequent flyers" usually have another agenda when they come to the nurse for abdominal pain.

The following are some questions to ask to obtain a good history when the complaint is abdominal pain.

- Depending upon the age and sex of the student, ask "Are you having your menstrual period? Could you be pregnant? Are you sexually active?"
- In order to rule out a urinary tract infection, ask "Do you have pain when you urinate?" For the sake of understanding and accuracy with young children, ask questions about urination in terms with which they are familiar – "Does it hurt when you pee?"
- Inquire about bowel function and again use terms that children understand. It is all right to use the word, "poop" to obtain the information needed. Young children may not recognize the terms "bowel movement" and "BM." (Neither do some older children.) So it is necessary to ask "When was the last time you pooped?" and "What did the poop look like?" Let the child describe feces in his own words if possible rather than prompting with terms that are not his own.

Inquire about foods and medicines recently consumed. Ask "What did you eat last night?" and "What kind of medications are you taking?" Also ask about others at home, "Is anyone else in the family sick?"

Sometimes muscle strain or injury results in abdominal pain. Ask "What were you doing yesterday?"

Keep in mind that some students complain of abdominal pain for nonphysical reasons. Find out what is happening in class. Ask "Are you having a test?" or "What are you doing in class?" Keep track to see if a frequent visitor always complains at the same time of day, or during the same class. It might be necessary to determine if the child is experiencing difficulty with the subject. A potentially

revealing question to ask is "Do you have a substitute today?" Obviously, substitute teachers do not know the students well, so they usually send any who complain to the nurse. Our "frequent flyers" often take full advantage of such opportunities.

The abdominal examination is different from examinations of other parts of the body in that palpation is done last. Make sure the child empties his bladder prior to the examination. (Some students have bathroom "issues" and might not use the school bathroom all day.) Begin with inspection and observation. Is the child in apparent distress? Or jaundiced? Have the child point to the location of the pain. Have the child lie on his back and bend his knees. While inspecting, look for symmetry, scars (especially surgical scars), bruises or burns, unusual distension, hernia, rash, and skin color. Next, ask the child to raise his head — and only his head – while you observe for umbilical hernia. In a medical setting the examination could be more complete, but in the school setting it is appropriate to limit the examination to areas above the "bikini line."

The next step is auscultation. Most nurses were never taught some very useful facts about stethoscopes: In order to obtain the best information from auscultation, it is best to use a stethoscope that has two tubes to enable you to hear in "stereo." The sounds diminish as they travel through the tubes, so it is best to avoid stethoscopes with really long tubes. The diaphragm (flat side) allows the user to hear high-pitched sounds. The bell allows the user to hear low-pitched sounds. (Some stethoscopes have no bell, rather, a small diaphragm for use with pediatric patients and a large diaphragm for use with adults.) It is necessary to listen with both the diaphragm and the bell when auscultating the abdomen. Listen for bowel sounds with the diaphragm in all four quadrants first. Lay the diaphragm on the abdomen **gently** to avoid stimulating bowel sounds, since auscultation is done before palpation to determine if bowel sounds are present without the stimulation of palpation. Next listen to all four quadrants using the bell gently. Normally, bowel sounds would be present in all four quadrants. In order to say that bowel sounds are *silent,* one must listen for at least five minutes.

Venous hums and arterial bruits are usually best heard with the bell, but begin listening with the diaphragm. Start with the diaphragm and listen all the way down the aorta to the umbilicus, listening on both sides, then go back up. Repeat the process using the bell. Slightly more pressure can be used with the bell but do not press too hard. Venous hums are low-pitched humming sounds coming from veins in the abdomen. An aortic bruit, which is a murmur in the artery, can be high-pitched or low-pitched, and is louder than venous hums. In the event that vascular sounds are heard in the abdomen, the child *needs* to be referred; it is important to describe exactly where the sound was heard.

Percussion is a technique that is becoming a lost art. It is a wonderful tool to use in physical assessment, but it requires practice. It involves tapping one's finger over the organs and listening for specific sounds. It is probably best to learn the technique from a physician who has mastered it. Percussion penetrates only about 4–6 centimeters and for that reason it is not as useful on a person who is obese, because fat tissue will alter the sounds. Below are some terms that describe the sounds and some organs with which they are associated.

- *Tympany* is a very loud, drum-like sound, usually heard over the stomach.
- *Hyper-resonance* is a loud sound with a booming quality that is usually heard over a child's lung.
- *Resonance* is a loud, hollow sound, heard in the periphery of lungs on most people.
- *Dullness* is a dull sound that is usually heard over the liver.
- *Flatness* is heard when percussing over a muscle.

Scratch percussion is a somewhat different technique, which can be used to find the borders of an organ, for example, the liver. Apply the diaphragm of the stethoscope to the abdomen in the area of the border of the liver. Then start scratching the abdomen with a cap of a pen near the umbilicus and move up toward the liver, keeping the stethoscope in one place. When the border of the liver is located, the sound will change.

The next step in examining the abdomen is palpation. Begin by doing gentle palpation with one hand, moving around the abdomen. The abdomen should feel soft, non-tender, with no masses. If gentle palpation causes the child distress, there is some kind of problem. If the child is ticklish or will not allow you to palpate, take the child's hand and let the child "help" to palpate. By placing your hand over the child's hand you can begin to palpate and the child might allow the examination to progress.

The next step is deep palpation. This is done with two hands, one on top of the other by deeply pushing on the abdomen and feeling for anything unusual. Follow the same pattern each time you palpate an abdomen. If you find something, describe it and look to see where it is. Mark it with a marker. A key point to note is that if the spleen can be palpated, it is probably about five times the size of a normal spleen. Deep palpation should not be done if an injury to the spleen is suspected. However, a person with an injury to the spleen is usually in so much pain that palpation is not possible. Percussion of the spleen might be possible and is safer. **Palpation of a ruptured spleen could cause further damage.**

Like percussion, palpation is a technique that can be learned from a physician or other healthcare provider who knows how to do it, and it requires practice. Read about percussion and palpation in a book on physical assessment and also learn the proper terminology so that you can describe the results correctly when you record your findings or write a referral. It is worth while to take the time to learn both techniques.

AUTHOR'S NOTE:

This article does not reflect how much fun everyone had while learning how to palpate and percuss the abdomen. I regret that it is not possible to describe adequately how organs feel when palpated or sound when percussed. Those who participated in this session know that it was a "hands on" experience and that is the best way to learn the techniques that Suzey Delger demonstrated. I especially appreciated the information she supplied about stethoscopes. Ms. Delger is a fountain of knowledge and I hope to hear from her at future NASN conferences.

ABOUT THE AUTHOR

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