Flank Pain: Rarely AAA, Usually a Kidney Stone

The odds of a ruptured abdominal aortic aneurysm are very small, but real.

BY ALICIA AULT
Contributing Writer

WASHINGTON — Most patients presenting with flank pain turn out to have kidney stones, but there is a very small but real potential that the cause may be a ruptured abdominal aortic aneurysm, according to Flavia Nobay, M.D., who spoke at the annual meeting of the American College of Emergency Physicians.

In general, 10% of men and 3% of women will experience a kidney stone, and 70% of kidney stones occur in people aged 20-50 years. The main risk factor is a previous stone; a family history of kidney stones is also predictive, making it 2.5 times more likely the patient will have a stone.

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If patients present with unilateral cost-vertebral angle pain, abrupt onset of pain, and hematuria, there is a 90% probability of having a stone, said Dr. Nobay, of the division of emergency medicine at the University of California, San Francisco.

Yet it is still important to be certain of the diagnosis, she said. For instance, 10%-30% of stones are negative for hematuria, and patients often present writhing in pain, which also occurs with aortic dissection.

For the 10% of patients who do not have stones, there is a variety of potential diagnoses. A 1993 study in the European Journal of Vascular Surgery found that 9.5% of patients older than 65 years who were referred for renal colic imaging were diagnosed with aortic dissection, but that study has never been replicated, Dr. Nobay said.

However, one-quarter to one-half of abdominal aortic aneurysm (AAA) cases are misdiagnosed, and the most common misdiagnosis is a renal stone, she said. The risk factors for AAA include a first-degree relative with dissection, smoking, hypertension, peripheral vascular disease, and undifferentiated flank pain.

The best way to differentiate between AAA and a kidney stone is to take a careful history and use CT scans, although CT imaging can't be done with unstable patients.

Vascular catastrophe is rare, however, affecting only 0.18% of patients with acute flank pain, Dr. Nobay said. Among the other potential diagnoses are herpes zoster, appendicitis, pyelonephritis, diverticulitis, and bowel obstruction. She said she usually gets several laboratory measures: a urinalysis for hematuria, leukocytes, and nitrites and a BUN with creatinine, which gives, at minimum, a baseline of kidney function.

CT imaging studies should be conducted in patients with no prior history of stones and in patients who have an unclear diagnosis, an underlying renal disorder, or are febrile. A CT scan is highly accurate except in patients taking indinavir, which makes kidney stones radiolucent. Current protocols call for 3-5-mm cuts without intravenous contrast.

Though a scan can't give any data on kidney function, it can help diagnose hydronephrosis, hydroureter, and perinephric stranding—all of which are secondary signs of stones, she said.

If no kidney stone is found on a CT scan, the stone could be between the cuts or it may recently have been passed.

Ultrasound is good for spotting proximal stones that are larger than 5 mm, intracalyceal stones, and distal stones at the ureterovesical junction. And unlike CT scans, there's no radiation exposure, and it is less expensive.

But the method might miss some stones, because it provides inadequate imaging of the renal collecting system and the ureter, and it is very much operator dependent, she said. It is a promising technology, but is not superior to CT, Dr. Nobay said.

The intravenous pyelogram provides high sensitivity and specificity for stones, but the procedure is not as cost-effective as CT, she said.

Kidney stone patients should be given pain medication, starting with intravenous ketorolac and other nonsteroidal anti-inflammatory drugs, which are often as effective as opiates, Dr. Nobay said.

Many clinicians have made the mistake of overhydrating patients; but if patients are already adequately hydrated, more fluid will cause a bigger fluid backup, leading to more pain, Dr. Nobay said. Only moderate hydration is necessary.

Stones of less than 2 mm pass in 8 days on average; 2-4 mm stones take about 12 days, and those larger than 4 mm pass in an average of 22 days. Patients with stones larger than 7 mm, or those who have failed on pain medications after 2-4 weeks, need an urgent urological consultation.

In the past, surgeons looked only at stones larger than 5 mm for intervention, but the size recently has been increased to 7 mm, Dr. Nobay said. ■

Abdominal Aortic Aneurysm Screening Urged for Women

BY TIMOTHY F. KIRN
Sacramento Bureau

The absence of a recommendation to screen women for abdominal aortic aneurysm in the recent U.S. Preventive Services Task Force statement could mean that as many as one-quarter to one-third of individuals will be missed, according to a new study.

The study reviewed the results of a large public screening program conducted in 40 states between 2002 and 2004. Among the 7,841 persons screened, of whom 60% were women, 183 abdominal aortic aneurysms (AAAs) were found. An AAA was detected in 143 (5%) of the men and 40 (1%) of the women, said the study's principal investigator, William R. Flinn, M.D., head of vascular surgery at the University of Maryland Medical Center.

Therefore, 22% of the AAAs detected were in women.

Moreover, 40% of the women with an AAA were found to be hypertensive, a risk factor for rupture, according to Dr. Flinn, who first reported the information at this year's Midwestern Vascular Surgery Society annual meeting, in Chicago.

The U.S. Preventive Services Task Force statement, issued this year, recommends one-time ultrasound screening for men aged 65-75 who have ever smoked. The statement does not recommend routine screening for men who have never smoked, nor does it recommend it for women.

The rationale for not recommending screening for women is that there is fair evidence that the harms would outweigh the benefits, according to the statement.

The prevalence of large AAAs in women is low. The majority of deaths from ruptured AAAs in women occur in those older than 80 years. At the same time, the operative mortality for surgical repair is between 2% and 6%, and about a third of surgeries have complications.

One large screening study with control subjects found no difference in mortality with screening among women followed for 10 years, the statement notes.

That data could be outdated, however, according to Dr. Flinn. In his study, the ratio of men to women with an AAA was 4:1 for those over 80 years of age, but 3:1 for those in their 70s, and about 2:1 for those in their 60s.

This may reflect the fact that women have now taken on many of the risk factors of men and that the prevalence is changing, Dr. Flinn reported.

In an interview, Dr. Flinn said the evidence of a rising prevalence is rather preliminary and not based on large numbers of women. Therefore, it is less-than-definitive information.

What he is certain of, however, is that screening for women is justified. The previous studies might not have found any improvement in mortality with screening because not enough of the women who screened positive did anything about their aneurysms, he proposed. That is not atypical behavior, particularly for women.

He also noted that in his program women account for at least 60% of those who take the time to come in for screening, and that until investigators really started to look more closely, medicine underestimated the impact of coronary artery disease on women.

"I would bet all the money I have that any screening for aneurysm will have a positive impact on mortality," he said. ■

Open Surgery for Pararenal AAA Had 2% Mortality Rate

Open surgical repair of pararenal abdominal aneurysms can be performed with a 30-day mortality rate of only 2%, according to a patient series from the Mayo Clinic.

Between 1993 and 2003, a total of 3,058 open surgical repairs of abdominal aortic aneurysms (AAAs) were performed. Of those, 246 were pararenal AAAs, reported Charles A. West, M.D., of the Mayo Clinic, Rochester, Minn.

The most common complication was postoperative renal insufficiency, which occurred in 21% of the patients and was associated with increased mesenteric ischemia time, left–renal vein division, and renal-artery bypass.

The mean renal ischemia time was 23 minutes, according to Dr. West, who first reported the information at this year's Midwestern Vascular Surgery Society annual meeting, in Chicago.

Pulmonary complications occurred in 16% of patients and were associated with advanced age, suprarenal aneurysm repair, and increased mesenteric ischemia time.

The investigators were unable to identify any specific factors associated with the five deaths that occurred within 30 days of the procedures.

The purpose of their review of the cases treated at the Mayo Clinic was to provide a baseline comparison that could be used now that so many AAA repairs are being done through an endovascular procedure. In the future, it will probably be possible to perform endovascular branch-graft repairs.

—Timothy F. Kirn

VERBATIM

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Dr. Peter Malfertheiner, on eradication of *H. pylori* as a potential way to reduce the risk of gastric cancer, p. 55