Information about Endoscopic Ultrasound (EUS) and Associated Advanced Procedures

Description of the Procedure:
Endoscopic ultrasound (EUS) is a means of examining of the digestive tract that can often give doctors information that is not easy to obtain by other methods. EUS also gives doctors the ability to take biopsies or to perform treatment on certain abnormalities in and adjacent to the digestive tract, using ultrasound images for guidance.

EUS involves the insertion of a flexible video instrument called an endoscope into the digestive tract while the doctor views images on a video monitor. The endoscope has a small ultrasound scanner on its tip. Once the scope is in the proper location, ultrasound images are obtained. If any abnormalities are seen, the doctor may use ultrasound guidance to direct special biopsy needles into any areas of interest. Several tiny tissue samples (biopsies) may be obtained to be examined under a microscope by a pathologist or submitted for other laboratory tests.

Most patients choose to receive intravenous sedation and sleep through the procedure, which typically takes about 30 to 45 minutes. Rectal ultrasound can often be performed without sedation, if it is not desired.

Advanced procedures:
A variety of more advanced therapeutic procedures can be performed using EUS for guidance. You and your doctor should discuss the specific risks, benefits, and alternatives of these procedures, and you should have an opportunity to have all of your questions answered before proceeding.

Risks: The following risks have been associated with gastrointestinal endoscopy:

1. Slowing of breathing and abnormal heart rhythms. Intravenous medications may cause a slowing of breathing and in rare cases may cause breathing to stop. They may also cause lowering of blood pressure and/or abnormal heart rhythms. You will be carefully monitored and treated for any changes in breathing, blood pressure and heart rhythms that may occur.

2. Perforation of the digestive tract. A perforation or tear in the digestive tract occurs very rarely. Perforation is more likely to occur in the presence of a tumor or other structural abnormalities of the digestive tract. A perforation that cannot be repaired during the endoscopy procedure may need to be treated with antibiotics and surgery.

3. Bleeding. Significant bleeding from the gastrointestinal tract may very rarely occur following endoscopy, particularly in people with bleeding disorders or after therapeutic procedures such as obtaining biopsies or removing large polyps. Excessive bleeding may require a blood transfusion or surgery.
4. Infection. Endoscopy may cause bacteria to temporarily enter the blood stream; however, the risk of adverse consequences from this is very low. Based on the latest recommendations of the American Heart Association, patients with heart murmurs or artificial heart valves are no longer given antibiotics before endoscopy. Antibiotics may be recommended if certain abnormalities are sampled with EUS, especially fluid collections or cysts as these are susceptible to infection caused by the procedure. Scopes similar to the type used for endoscopic ultrasound have been reported to transmit bacteria to patients, occasionally leading to serious infections. Very rarely these bacteria have been resistant to multiple antibiotics.

5. Aspiration of stomach contents. Aspiration of stomach contents into the lungs occurs rarely in patients undergoing this procedure.

6. Other complications. Patients may rarely experience an unexpected adverse reaction to medications. Inflammation, bruising or infection at the intravenous site, a sore throat, mild abdominal discomfort, pancreatitis, paralysis (following nerve block procedures), and dental injury are other possible complications of EUS. Medications administered for sedation may cause a brief period of memory loss. Unanticipated complications can occur.

7. Death. Death has been reported to follow upper gastrointestinal endoscopy in 7 per 100,000 procedures, most often in patients who are seriously ill prior to the procedure. Risks may be increased in more complex therapeutic procedures.

8. Misdiagnosis. EUS is a very powerful tool for disease diagnosis, but it is not perfect, and occasionally may miss cancer or another serious condition.

Benefits:

Endoscopic ultrasound may identify a cause for symptoms that may not be obtained by x-rays or other diagnostic means. The procedure is generally very safe and is well tolerated by most patients. Biopsies and treatments performed through the endoscope often carry significantly less risk than surgery.

Alternative options:

Radiology studies such as x-rays or MRI scans, directed biopsies through the skin (percutaneous) and surgery are possible alternatives to endoscopic ultrasound.