Diagnosis and Staging of Anal Cancer

Once a diagnosis of cancer is made from any site, one of the first steps done prior to determining how the cancer should be treated is to determine whether it is localized or has metastasized (spread) either to nearby lymph nodes or to distant organs, a process known as staging a cancer.

The size of the tumor is usually measured by DARE. Typically following a diagnosis, patients will have CAT scans of the chest, abdomen, and pelvis to stage their cancer. A CAT scan is a common x-ray procedure that in comparison to common x-rays of bones provides images of the internal organs and other structures such as blood vessels and lymph nodes. Prior to imaging, patients usually drink a barium-like solution to outline the contents of the gastrointestinal tract, barium is also inserted through a tube in the rectum, and contrast dye is injected intravenously to distinguish the vascular structures. This test is commonly done to assess the inguinal and pelvic lymph nodes and presence or absence of distant metastases in the liver and lungs. In some cases, an MRI of the pelvis is done, which is a different type of imaging that uses a large magnetic coil and may be helpful in detecting spread to nearby organs.

Another test that is becoming more commonly used to stage anal cancers is an endoanal ultrasound. This is a probe approximately the size of an anoscope that can be inserted into the anus and rectum and uses sound waves like SONAR to generate images. It is very sensitive at detecting perirectal lymph nodes and involvement of neighboring organs. Ultrasound also provides a good estimation of the depth of invasion of the tumor, whether it is limited to the submucosa (tissue immediately beneath the lining of the anus) or penetrates the sphincter muscle. A modified staging system based on ultrasound findings has been
proposed: a uT1 tumor is confined to the submucosa, a uTa lesion only invades the internal anal sphincter, a uTb lesion invades the external sphincter, a uT3 invades through the sphincter muscles into the perianal tissue, and a uT4 tumor invades neighboring structures.