Abnormal Pap Smears

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Evaluation of an Abnormal Pap Smear
INTRODUCTION
The pap smear is a simple yet very effective screening test which is intended to detect cancer of the cervix, as well as precancerous abnormalities. Early detection and treatment has greatly improved the cure rate of cervical cancer, and treatment of precancerous changes, known as dysplasia, effectively prevents cervical cancer.

The Papanicolou smear is obtained by gently scraping the surface and canal of the cervix with a small spatula and brush to remove some of the surface cells. The cells are fixed and sent to a pathology lab where they are examined under a microscope by trained technologists. The cells on the slide are carefully examined to determine if they are normal or abnormal. Abnormal cells are categorized based on special characteristics as being cancer, dysplasia (pre-cancer), or atypical (borderline).

Even the most accurate test is not absolutely perfect. Because it is a screening test, the pap smear is not a perfect test either. It can appear to be abnormal when there are no abnormal cells present, or it can appear normal when there are abnormal cells present. It detects many cellular changes which are not uncommon or harmful. Many "abnormal" paps are in fact normal, as determined by further testing. The reason this occurs is because some cellular changes cannot be determined with certainty to be normal or abnormal by the pap smear alone. The most common example is "borderline" pap smears. These pap smears are said to contain atypical cells. About 25% of patients who have atypical cells on a pap smear will actually have dysplasia. By evaluating atypical pap smears, as well as clearly abnormal paps, more patients with truly abnormal cervical cells will be detected.

Pap smears can also miss abnormalities. In these cases the pap smear appears normal even if abnormal cells are present on the cervix. This is called a false negative test, and it occurs in about 5% of pap smears. Because false negative tests can occur, the pap smear should be repeated every year in most patients.

Thin Prep and computer screened slides are being investigated as tools to improve detection. They increase the number of early changes detected, but have not changed the number of lives saved. More information is needed before these tests become universal.

WHAT CAUSES DYSPLASIA?
Dysplasia can be caused by a virus known as human papilloma virus (HPV). This virus infects skin and mucous membranes, and is transmitted by direct contact with an infected individual. Infection of the genital area is sexually transmitted, and is common in sexually active people. Approximately 40% of adults have evidence of HPV in the genital tissues. The percentage of people with the virus declines with age, suggesting that the infection is not permanent. In a small percentage of people with the virus, infection causes genital warts or dysplasia of the cervix, vagina, or vulva. In some cases the dysplasia can progress to cancer. In the majority of people, however, HPV

causes no abnormalities at all. The reason HPV can cause problems in some, but not others, is probably due to the presence of more aggressive strains of the virus, in combination with the fact that some women are more susceptible to infection, such as those who smoke.

Human papilloma virus itself is not harmful, but in some cases the abnormalities that it can cause require treatment. This is the case with cervical dysplasia. Although there is no way to eradicate the virus from the body, treatment of dysplasia is relatively easy and very effective. Because HPV is common and present in many tissues, dysplasia can sometimes occur again after it is treated. For this reason regular pap smears should be obtained annually in most women.

EVALUATION

Atypical or "borderline" pap smears can result from infection, inflammation, lack of estrogen (as in post-menopausal women), irritation from various causes, and other reasons. Patients with a pap smear showing atypia should be examined for treatable causes, such as an infection, and appropriate treatment should be given. The pap smear can then be repeated in about three months. This time period is necessary for the cellular changes to subside and the surface cells of the cervix to regenerate after a pap smear. In the majority of cases the repeat pap smear is normal. If atypia persists, further testing is needed since approximately 25% of these patients will have dysplasia.

Patients with pap smears showing dysplasia require further testing to confirm the diagnosis. The definitive test is called colposcopy, in which the cervix is examined under magnification. The degree and extent of any abnormal cervical tissue can then be determined. Biopsies of any abnormal areas are taken to establish an exact diagnosis. Treatment is based on the colposcopy and biopsy results, not on the pap smear alone.

Dysplasia is categorized as mild, moderate, or severe, depending on the amount and degree of abnormal cells in the tissue. If left untreated, dysplasia can progress into cancer in some cases. This process usually takes 2- 5 years, and is more likely to occur in cases of severe dysplasia. Severe dysplasia usually persists, and if it is not treated, can progress to cancer in about 50-70% of cases. Mild dysplasia is actually most likely to resolve without treatment. Only about 10% of mild dysplasia will progress to cancer if untreated. Again this progression takes many years to occur. Moderate dysplasia may resolve, remain the same, or progress, and falls somewhere in between mild and severe dysplasia.

TREATMENT

Only dysplasia and cancer truly require treatment, and in cases of mild dysplasia close observation without treatment may be appropriate. Cancer is fortunately uncommon. When it is discovered, it is treated with either a simple hysterectomy, radical hysterectomy, or with radiation therapy with or without a hysterectomy, all depending on the stage or extent of the cancer.

Dysplasia is relatively easy to treat by procedures that can be done in the office. The abnormal tissue is usually removed. The abnormal tissue can be removed by cutting out a cone-shaped piece of cervix, which can be done in

the operating room with a scalpel or laser, or in the office with a prodecure known as LEEP (loop electrosurgical excision procedure).

The LEEP procedure is simple, effective, and has minimal risks and discomforts. Because it can be performed in the office it is convenient and less expensive. It removes the abnormal tissue of the cervix thereby treating the condition, and the tissue can be sent to the pathology lab to confirm the diagnosis and confirm that all abnormal tissue is removed.

After treatment for cervical dysplasia, pap smears should be obtained about every four to six months for two to three years, depending on the severity of the dysplasia. The overall cure rate is greater than 95%. If dysplasia returns or persists, retreatment is generally curative. In rare cases, hysterectomy may be necessary to completely resolve the problem.

CLOSING

Abnormal pap smears are actually very common. Fortunately, the majority are only minor abnormalities that require little to no treatment. Others require further evaluation, treatment, and careful follow-up. The cure rate for mild, moderate, and even severe dysplasia is very high. But it is important that this condition be evaluated and treated correctly and in a timely manner. Even abnormalities that do not require treatment should be followed frequently and carefully.