to 2 weeks after) in order to prevent subsequent incontinence. Extensive surgical reconstruction is otherwise needed for such patients. If the patient is unstable, repair can often wait a few days until she is stable.

In prepubertal girls, where the pelvis is narrow and space limited, repair of urethral stenoses is very difficult. Often times, a combined vaginal and abdominal approach in needed for successful reconstruction – and often may require a partial or total pubectomy. In such cases, an interposition flap of omentum is important to prevent bladder and bowel herniation.

If the patient is incontinent after injury or repair, the urethra is typically fixed and rigid. In such cases, we have placed a bladder neck artificial sphincter, with good dryness. Unfortunately, the bladder is often too scarred to mobilize the bladder enough to do a bladder neck reconstruction, such as a Kropp or Young Dees Leadbetter

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PATHOLOGY

Partial atrophy on prostate needle biopsy cores: a morphologic and immunohistochemical study

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Partial atrophy is the most common benign mimicker of prostate cancer on needle biopsy. Of 3916 prostate needle core biopsy cases received in our consultation service over a period of 3 months (March 1, 2007 to May 31, 2007), 170 cases (4.3%) with partial atrophy were diagnosed as atypical glands by outside pathologists and prospectively identified. We supplemented our material with 108 cases of partial atrophy sent to our consultation service in 2006 from a single institution, which frequently uses a triple cocktail stain [p63, high molecular weight cytokeratin (HMWCK), alpha-methyl acyl-Coa racemase (AMACR)]. The morphologic features of the 278 cases and immunohistochemistry of 236 cases (198 with prostate cocktail and 38 with only basal cell makers) were analyzed. Forty-eight of 278 (17.3%) partial atrophy cases were mixed with postatrophic hyperplasia. Enlarged nuclei were visible in 43/278 (15.5%) cases, with prominent nucleoli seen in 58/278 (20.9%) cases (30 cases associated with nuclear enlargement). Of 198 cases with a prostatic cocktail stain, 48 (24.2%) had a cancer pattern for both basal cells and AMACR (p63-, HMWCK-, and AMACR+), 14 (7.1%) had a cancer pattern for basal cells (p63-, HMWCK-, and AMACR-), 89 (44.9%) had a cancer pattern for AMACR (p63+, HMWCK+, and AMACR+), and 47 (23.7%) had a totally benign pattern (p63+, HMWCK+, and AMACR-). Of the 198 cases using the cocktail stain, 136 (68.7%) had positive basal cell staining. The percentage of basal cells labeled with the combination of p63/HMWCK was: < 5% in 42 (21.2%) cases, 5% to 75% in 58 (29.3%) cases, and > 75% in 36 (18.2%) cases. An additional 38 cases immunostained only for p63 and/or HMWCK was negative in 2 (5.2%) cases, < 5% (13.1%) in 5 cases, 5% to 75% in 19 (50%) cases, and > 75% in 12 (31.6%) cases. In conclusion, partial atrophy is a benign mimicker of adenocarcinoma both as a result of its routine morphologic features and its immunohistochemical profile. Recognition of the classic morphology of partial

atrophy on routine hematoxylin and eosin-stained sections is critical to avoid misdiagnosing partial atrophy as adenocarcinoma.

Editorial Comment

The most common benign lesion that causes difficulty in the differential diagnosis with adenocarcinoma of the prostate is partial atrophy. This lesion was reported in the periodic literature in 1998 (1). Architecturally, partial atrophy consists of crowded glands often with a disorganized growth pattern. In contrast to complete atrophy, which can typically be diagnosed at scanning magnification owing to the presence of well-formed glands with a very basophilic appearance, partial atrophy has pale cytoplasm lateral to the nuclei giving rise to pale staining glands that more closely mimic cancer. Characteristically the basal cells are discontinuous and in some acini may be absent. An additional factor that contributes to the difficulty in distinguishing cancer from partial atrophy is the positivity for AMACR (α-methylacyl coenzyme A racemase) in some acini. In a recent study in our institution, we used the cocktail AMACR+34βE12 for analyzing the immunohistochemistry expression of a total of 727 acini on needle prostatic biopsies corresponding to 324 adenocarcinoma acini, 213 normal acini, and 190 partial atrophy acini. Adenocarcinoma acini showed weak, or strong expression of AMACR in 73/324 (22.5%), and 251/324 (77.5%) acini, respectively; normal acini showed negative, weak, or strong expression in 167/213 (78.4%), 33/213 (15.5%), and 13/213 (6.1%) acini, respectively; and foci of partial atrophy showed negative, and weak expression in 143/190 (75.3%), and 47/190 (24.7%) acini, respectively. No acini in partial atrophy showed strong expression. The distribution of basal cells in partial atrophy was continuous, discontinuous, and absent in 42/190 (22.1%), 104/190 (54.7%), and 44/190 (23.2%) acini, respectively. The absence of basal cells in 44/190 (23.2%) of partial atrophy foci, makes the use of AMACR attractive for the differential diagnosis. No strong positivity was seen in partial atrophy acini, however, the weak positivity seen in approximately 25% of the acini may be a pitfall for the correct interpretation. Furthermore, normal acini may show strong expression of AMACR in approximately 5% of the acini.

Reference

1. Oppenheimer JR, Wills ML, Epstein JI: Partial atrophy in prostate needle cores: another diagnostic pitfall for the surgical pathologist. Am J Surg Pathol. 1998; 22: 440-5.

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Aberrant diffuse expression of p63 in adenocarcinoma of the prostate on needle biopsy and radical prostatectomy: report of 21 cases

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Aberrant diffuse expression of p63 in prostate carcinoma cells is a rare and poorly understood phenomenon. We studied 19 cases of prostate cancer with aberrant diffuse expression of p63 on needle biopsy and reviewed the subsequent radical prostatectomies in 6 cases. In 19/21 cases, 100% of the cancer nuclei stained intensely for p63, with 70% staining in the remaining 2 cases. Two additional radical prostatectomies with aberrant p63 staining with no needle biopsies available for review were also analyzed. On the hematoxylin and eosin-stained

slides, 19/21 cases (90.5%) showed a distinctive morphology composed predominantly of glands, nests, and cords with atrophic cytoplasm, hyperchromatic nuclei, and visible nucleoli. Needle biopsy cases ranged from Gleason patterns 3 to 5 with tumor identified on one or more cores, ranging from a minute focus to 80% of the core. In all 8 radical prostatectomies p63 positive cancer was present, with in 2/8 cases both p63 positive cancer and usual p63 negative acinar prostate cancer. In all 8 cases, the tumors were organ confined with negative margins and there was no seminal vesicle involvement or lymph node metastasis. The presence of p63 positive atypical glands with an infiltrative pattern and perineural invasion on radical prostatectomy confirmed the needle biopsy diagnosis of carcinoma. Rarely, prostate cancer can aberrantly express diffuse p63 staining in a nonbasal cell distribution leading to the erroneous diagnosis of atrophy or atypical basal cell proliferation. The diagnosis of prostate cancer is based on the morphology and confirmed by the absence of high molecular weight cytokeratin staining and positivity for alpha-methylacyl-CoA racemase in the atypical glands. Pathologists need to be aware of this rare and unusual phenomenon, which is a potential pitfall in prostate cancer diagnosis.

Editorial Comment

Pathologists use immunohistochemistry for the differential diagnosis between adenocarcinoma of the prostate and benign mimickers in difficult cases. The aim is to detect basal cells which excludes adenocarcinoma (1). The most frequently used markers for basal cells is clone 34βE12 (a pool of high-molecular-cytokeratins 1,5,10,11 and 14) and p63. 34βE12 stains the cytoplasm and p63 stains the nucleus of basal cells.

The cases of adenocarcinoma with aberrant expression of p63 studied by Osunkoya et al. is a very important finding. Pathologists need to be aware of this rare and unusual phenomenon, which is a potential pitfall in prostate cancer diagnosis.

Reference

1. O'Malley FP, Grignon DJ, Shum DT: Usefulness of immunoperoxidase staining with high-molecular-weight cytokeratin in the differential diagnosis of small-acinar lesions of the prostate gland. Virchows Arch A Pathol Anat Histopathol. 1990; 417: 191-6.

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INVESTIGATIVE UROLOGY

Visualization of the neurovascular bundles and major pelvic ganglion with fluorescent tracers after penile injection in the rat

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Objective: To evaluate whether fluorescent tracers can consistently label the neurovascular bundles (NVBs) and major pelvic ganglion (MPG) after an intracavernosal penile injection, as the reported incidence of