Peyronie Disease: AUA Guidelines and Challenging Cases

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Overview: Peyronie disease (PD) characterized by fibrosis of tunica, pain, deformity, erectile dysfunction (ED), and emotional distress; probably attributable to microvascular trauma in erect or semierect state; collagen in tunica changes from type 1 to type 3

Inappropriate treatments: include vitamin E, tamoxifen, procarbazine, oω-3 oils, and L-carnitine; colchicine, pentoxifylline, and some other oral medications may be effective, but not enough evidence available

Intralesional injection: collagenase (Xiaflex) in combination with modeling approved by Food and Drug Administration for treatment of PD; indicated (grade B recommendation) for patients with stable curvature (curvature >30° and <90°); interferon-α also recommended (grade B); data on verapamil less robust

Shockwave lithotripsy: may improve pain associated with PD but does not reduce curvature or size of plaque

Surgical management: approach depends on erectile function; plication, incision, excision of plaque, or grafting recommended for men who can achieve adequate rigidity with or without pharmacotherapy; prosthetic surgery should be added for patients with refractory ED

Case 1: Presentation — 65-yr-old presented 2 yr after radical prostatectomy with ED and penile curvature; patient had no pain; dorsal curvature stable for 6 mo; problem causing marital distress; preoperatively, patient had good sexual function; postoperative ED responded to phosphodiesterase-5 inhibitors (PDE5i) tadalafil (Cialis) and sildenafil (Viagra); patient’s only cardiovascular risk factor hypertension; examination — phalus circumcised; dorsal plaque in shaft extended to base; stretched length 6 cm; prostate-specific antigen undetectable and testosterone normal; oral therapy — patient started on pentoxifylline and vacuum erection device; PDE5i continued; erection demonstrated in office with IC; duplex sonography — patient had 60° dorsal curvature, 1.5 x 3-cm plaque, and bilateral arterial and venous insufficiency; intralesional injection (ILI) — patient presented before collagenase available; treated with ILI with interferon (weekly for 6 wk); curvature decreased to 45° and became less dorsal; unknown how long to continue ILI; in men who tolerate and respond to ILI, another cycle may be offered; patient had additional ILI but no more improvement; outcome not satisfactory; if collagenase available, it could be offered; in this patient, surgery discussed

Collagenase: treatment includes 2 injections/wk, followed by modeling visit; 4 treatment cycles usually recommended

Surgical options: include plication, excision or incision of plaque with or without grafting, and prosthetics; patients often have only ≈30% improvement from expensive ILI; 3 to 6 mo of medical therapy recommended before surgery (eg, pentoxifylline and topical verapamil); plication — benign procedure; patients without significant deformity may be treated successfully if ED responds to drugs; patients with minimal curvature require no treatment; urologist should ascertain goals of patient; many men only want enough correction to resume sexual activity; others want straight erection; patient should know that medical and injection therapies may not achieve perfect straightness; penile shortening expected with any procedure; shortening may be less important if patient can achieve good erection; 16-dot technique — associated with little disability, but suboptimal for patient with short penis; plication sutures placed on side opposite curvature; in man with good erectile function and length, plication good first step, does not preclude subsequent procedures, and may be performed in conjunction with implantation of prosthetic; plication decreases incidence of ED; role of duplex scanning limited; surgeon should document preoperative sexual function and make sure patient has realistic expectations; complications include new venous leaks after excision or Nesbit procedure

Case 2: presentation — 60-yr-old had buckling injury during intercourse, resulting in deformity and shortening but no pain; main complaint hourglass deformity with shortening over last 2 yr; patient had reasonable erectile function and used tadalafil; only cardiovascular risk factor diabetes; examination — patient circumcised; no palpable plaque; stretched length 3 cm; on ICI, patient had hourglass deformity with decreased distal rigidity;...
deformity probably caused by circumferential scarring and fibrous band of plaque tissue; distal arterial flow compromised; venous leak present at level of fibrous band; management — in recent study of men with hourglass deformity, those with normal erectile function treated with excision and grafting; those with ED received prosthesis; both groups had excellent outcomes; for this patient, prosthesis could add length; patient likely to achieve functional outcome; American Medical Systems prosthesis preferable for short penis

Penile length: common complaint of men receiving prostheses; in those with PD, length already lost because of scarring; sliding technique for treating penile shortening and ED — recently reported; incisions made on tunica before placing prosthesis; tunica defects not closed, but Buck fascia reapproximated; mean gain in length 3.5 cm; 10% of patients had postoperative paresis of glans because of stretching of dorsal nerve, but resolved after 3 mo

Pentoxifylline: useful for pain; oral therapy indicated acutely after injury; if injury remote and curvature stable, patient may not improve; erectile pain often resolves

Suggested Reading


Role of Surgical Consolidation Following Chemotherapy for Nonseminomatous Germ Cell Tumors

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Cases: case 1 — patient with seminoma and large retroperitoneal mass had 4 cycles of cisplatin, etoposide, and bleomycin (PEB); tumor markers normal but patient had residual retroperitoneal mass (3 cm); next step retroperitoneal lymph node dissection (RPLND); positron emission tomography (PET) primarily used for postseminoma residual masses; case 2 — patient had orchectomy for solid mass; tumor markers and imaging negative; histology 50% seminoma, 40% embryonal, and 10% mature teratoma; best management includes observation, nerve-sparing RPLND, 2 cycles of PEB, or biopsy of contralateral testis; patient should not be treated with retroperitoneal radiation (not used for nonseminomatous germ cell tumors); treatment may be better than observation because of embryonal histology; case 3 — patient had nonseminomatous germ cell tumor with retroperitoneal and lung metastases; after orchectomy and 4 cycles of PEB, markers negative and patient had residual retroperitoneal (5 cm) and pulmonary (1.5 cm) masses; for nonseminomatous germ cell tumor, radical orchectomy should be done, followed by primary RPLND for select stage I tumors; most significant role of surgery would be postchemotherapy consolidation and resection of residual masses after chemotherapy in other locations

Epidemiology: cancer of testis affects 5 in 100,000 men; 8500 new cases/yr; rare in Asians and African Americans; incidence highest in Scandinavians; overall survival >95%

Tumor characteristics: histologies — include seminoma and nonseminomatous germ cell tumor; seminoma most common cell type; combinations of embryonal and teratocarcinoma also common; markers — include β-human chorionic gonadotropin (β-HCG), α-fetoprotein (AFP), and lactate dehydrogenase; elevated AFP indicates nonseminomatous elements; elevated β-HCG most common in nonseminomatous tumors but also found in 10% of seminomas; normal markers after orchietomy do not preclude metastases; elevated values imply persistent disease; high-risk features — vascular or lymphatic invasion, embryonal elements, pathologic stage T2, and absence of yolk sac elements

Management: options for low-stage, pure seminoma retroperitoneal radiation therapy, single-dose carboplatin, and observation; observation favored for low stages; risk for retroperitoneal metastases in stage I 12% to 15%; higher-stage tumors treated with BEP or etoposide and cisplatin; if PET negative and mass <3 cm, patient may be observed; for nonseminoma, any residual mass should be resected; in contrast, postseminoma masses associated with lower risk for malignancy and more surgical complications; RPLND indicated for higher-risk stage I nonseminoma; most lower-risk stage I tumors observed or treated with PEB; in unselected group of stage I nonseminomas, 25% to 30% have retroperitoneal metastases, even if imaging negative; high-risk pathology associated with retroperitoneal recurrence

Surveillance includes computed tomography (CT) every 3 mo for 1 yr, then every 4 mo for 1 yr, then every 6 mo; low-dose CT and magnetic resonance imaging limit exposure to radiation

Therapeutic aspects: surgery — cure possible with surgery alone, even if disease metastatic; surgery decreases follow-up burden (recurrences rare after surgery); chemotherapy — stage IIb and III nonseminomatous tumors treated with primary chemotherapy; 70% of patients with clinical stage T2b have complete response; postchemotherapy dissection indicated for any retroperitoneal disease; salvage chemotherapy needed if markers do not normalize; incidence of persistent malignancy 15% to 18%; for persistent malignancy, bone marrow transplantation may be done; complete RPLND — preferred over excision of residual mass, based on data from 532 patients who had chemotherapy and RPLND; 51% had viable tumor or teratoma; 7% to 32% had tumor or teratoma outside boundaries of template of dissection; study conducted at tertiary center in high-risk patients; if imaging reliable, surgeon may sometimes avoid dissecting paracaval nodes, but interaortocaval and paraaortic dissection usually performed; when doing postchemotherapy RPLND, persistence of residual mass associated with poor outcome; when surgery chosen, surgeon should commit to resecting mass and doing other required procedures, including replacing great vessels or ureteral reimplantation

Suggested Reading


Surgical Tips for Partial Nephrectomy

Dr. Kane

Nephron-sparing surgery: renal function after partial nephrectomy (PN) primarily determined by amount of tissue removed, not duration of ischemia; study of 155 patients evaluated parenchymal volume and estimated glomerular filtration rate (eGFR) after PN; recovery from ischemia similar regardless of preoperative eGFR in affected kidney; volume of kidney...
Radical vs partial nephrectomy: retrospective study. Medicare data—evaluated >7000 patients with T1a masses; 27% had PN and 73% had radical nephrectomy (RN); PN group had lower risk for death but possibly included healthier patients; PN group had 11% increase in survival at 5 yr and 15% increase at 8 yr; no difference between groups in death from kidney cancer; largest randomized trial—of PN vs RN (European Organisation for Research and Treatment of Cancer [EORTC] 30904) reached different conclusion after median follow-up of 9 yr; patients had solitary tumors <5 cm, normal contralateral kidney, and eGFR >60 mL/min/1.73 m²; 10-yr overall survival significantly better in RN group; results contrary to retrospective data; tumor progression similar in both groups; only 12 of 117 deaths due to kidney cancer; cardiovascular disease most likely cause of death in patients with incidentally discovered masses; in meta-analysis of PN vs RN in >40,000 patients (mostly retrospective studies), PN associated with 61% reduction in risk for severe kidney disease, 19% reduction in risk for all-cause mortality, and 29% reduction in risk for cancer-specific mortality; preponderance of evidence suggests that for properly selected patients, risk for renal insufficiency lower after PN, which may favorably affect overall survival  

Enucleation vs sharp excision: study compared enucleation (86 cases) with sharp excision (516 cases); enucleation group had higher nephrometry scores, shorter mean ischemia and operative times, lower incidence of entry into renal sinus, and less suturing in tumor bed; enucleation not necessarily better strategy; open or robotic PN allows safe excision close to tumor as long as margins negative  

Incidence: 30% of stage I kidney cancers treated with PN in 2007; focal ablation done in 7%  

Laparoscopic vs robotic procedures: robot useful during PN; in retrospective analysis of 146 laparoscopic and 91 robotic PNs, robotic group had less blood loss, shorter warm ischemia time, less reduction in eGFR, and fewer intraoperative complications; success of surgery correlated with preoperative stage of chronic kidney disease  

Robotic procedures: port placement important; kidney must be mobilized so that dominant hand of surgeon can easily suture renal bed; transperitoneal or retroperitoneal approach may be used; lateral position of camera leaves more room for assistant, results in fewer external conflicts among robotic arms, and facilitates placement of fourth arm; fourth arm makes assistant less critical and increases active range of robot, but requires space; surgeon and assistant should be alert for robotic arm conflicts that could bruise patient; triangle configuration with lateral camera may be used for nephroureterectomy; when switching to work in pelvis, setup may be rearranged to other direction  

Drains and stents: 10-mm flat Jackson-Pratt drain preferred for PN; stent rarely used; 3-0 poliglecaprone 25 (Monocryl) and sliding clips (Hem-O-Lok) used for renorrhaphy; hemostatic agents expensive and often ineffective; technique same for open PN  

Follow-up: recommended every 6 mo for 2 yr, then annually for 5 yr; should include metabolic panel and imaging of chest and abdomen; after first 6 mo, cross-sectional imaging may not be needed, depending on stage and grade; patient with positive margin should be followed more closely for local recurrence, but reoperation typically not needed  

Vascular control: running 3-0 Monocryl suture used in base of resection, followed by sliding Hem-O-Lok sutures and running, horizontal 3-0 mattress suture; cautery and argon usually not needed; secure renorrhaphy prevents leak and bleeding; running suture distributes pressure and closes parenchyma

Suggested Reading


Acknowledgments

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1. Which of the following medical treatments is appropriate for patients with Peyronie disease (PD)?
   (A) Vitamin E  (C) Interferon–α
   (B) Tamoxifen  (D) Procarbazine

2. Which of the following statements about treatments for PD is correct?
   (A) Shock wave lithotripsy may be used to reduce penile curvature
   (B) Patients usually achieve ≥50% improvement with intralesional injections
   (C) The 16-dot technique is suboptimal for a patient with a short penis
   (D) Plication and implantation of a penile prosthesis should not be performed during the same procedure

3. A patient with seminoma and a large retroperitoneal mass had 4 cycles of chemotherapy. Thereafter, tumor markers were normal but the patient had a residual retroperitoneal mass measuring 3 cm. Which of the following should be the next step?
   (A) Retroperitoneal lymph node dissection (RPLND)
   (B) Observation
   (C) Biopsy
   (D) Salvage chemotherapy

4. A patient had an orchiectomy for a solid mass, after which tumor markers and imaging were negative. Histology was mixed, showing seminoma, embryonal cells, and mature teratoma. Subsequent treatment may include any of the following, EXCEPT:
   (A) Observation
   (B) RPLND
   (C) Cisplatin, etoposide, and bleomycin
   (D) Retroperitoneal radiation

5. In a patient with a germ cell tumor, an elevated level of ________ indicates nonseminomatous tumor elements.
   (A) β-human chorionic gonadotropin
   (B) α-fetoprotein
   (C) Lactate dehydrogenase

6. Which of the following is the preferred treatment for low-stage, pure seminoma?
   (A) Carboplatin
   (B) RPLND
   (C) Observation
   (D) Etoposide and bleomycin

7. Which of the following is the primary treatment for stage IIb nonseminomatous tumors?
   (A) Chemotherapy
   (B) Surgery
   (C) Radiation therapy
   (D) Multimodal therapy

8. Which of the following is the primary determinant of renal function after PN?
   (A) Preoperative estimated glomerular filtration rate
   (B) Cold vs warm ischemia
   (C) Duration of ischemia
   (D) Preserved volume of kidney

9. The largest randomized trial that compared partial with radical nephrectomy in patients with solitary tumors (EORTC 30904) found that:
   (A) PN is preferred over RN in tumors <5 cm
   (B) The most likely cause of death in patients with incidentally discovered renal masses is cardiovascular disease
   (C) 10-yr overall survival was significantly better in the PN group

10. In a retrospective analysis, compared with laparoscopic PN, robotic PN was associated with:
    (A) Shorter warm ischemia time
    (B) Similar quantity of blood loss
    (C) More intraoperative complications
    (D) Greater reduction in eGFR

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