Disclosure

Speaker name: Wen Hsien Hsu

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
Iliac Vein Stenting For Secondary Lymphedema of Lower Extremity Resulting From Pelvic Radiotherapy

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Introduction

- 1899 Gassman - first described radiodermatitis and proliferation of the endothelium leading to diminished vessel lumen.

- 1937 Windholz - described prominent intimal proliferation in irradiated arteries and partial obliteration of the arterial lumen and complete obliteration of the vein.
Radiation effect on vein

- Analogous to radiation-induced arteritis
- Early inflammatory phase - Endothelial cell swelling and sloughing
- Late phase - Endothelial cell and smooth muscle cell proliferation leading to vessel stenosis and thrombosis
Morphological change of veins

- Uniform stricture - long segment
- Irregular stricture
- Stenosis - short segment
- Deformity or fenestration of the ilio-caval junction
- Compression at the arterial-venous intersection
Hypothesis of morphological change of iliac vein

- The pulsatile iliac artery compressing on iliac vein during the early phase of radiation aggravates intimal change of iliac vein.

- Continuous beating force of iliac artery transmitted to iliac vein in the late phase of radiation effect induces more intimal adhesion and narrowing.
Venous Injury following radiation therapy

Iliac vein stricture due to RT for uterine ca

Hip irradiation for acetabulum malignancy

Venous stricture resulting thrombosis and partial recanalization
Morphologic change of iliocaval junction
Manifestation of radiation-induced iliac vein stenosis or stricture

- Asymptomatic to very subtle edema of leg
- Extensive limb-threatening ilio-femoral DVT or possibly life-threatening pulmonary embolus
- Clinical symptoms of proximal venous outflow obstruction, mainly lymphedema of lower extremity
Secondary Lymphedema of Lower Extremity Related to RT
Deployment of double barrel kissing stents

Management
Conversion of malfunction stent to kissing stents
Lower limb lymphedema following pelvic irradiation for variety of pelvic malignancy
(Jan 2006 to Dec 2014)

**Materials**

- Female: 97
- Male: 5

**Age distribution**

- Before 30 yrs: 1
- 30 yrs– 50 yrs: 6
- 51 yrs- 70 yrs: 67
- 71 yrs- 90 yrs: 26

**Cancer Types**

- Cervical cancer: n=92
- Endometrial cancer: n=6
- Prostatic cancer: n=2
- Liposarcoma of thigh: n=2
Results

- Angioplasty with Stenting  102 patients  Totally 254 stents deployed

- Technical success rate- 99%
- No mortality
- Morbidity –minimal to 1 major complication (solved)
Case 1

- 62-years-old female
- Hx: Hysterectomy with postop radiotherapy for cervical ca
- Asymptomatic for 3 years
- Rt leg lymphoedema for 7 years
Case 2
56-yr female C/O-Rt leg swelling  HX-RT for malignancy of right acetabulum
Case 3

52-yr female  Hx of endometrial cancer  with PO  RT
Examples of pre-and post-stenting condition
Conclusion

- Angioplastic dilatation with stenting is safe and effective to ameliorate radiation-induced lymphedema of lower extremity.

- Post-stenting anticoagulation for 6 to 9 months is mandatory.

- Long term follow up is necessary to assure the patency of stents.
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