

## Plummer-Vinson Video Narration

### Slide 1

Welcome back, clinical problem solvers! My name is Jim McPhail, and I'm a third year internal medicine resident at UAB Medical Center. I am excited to share with you an illness script on Plummer-Vinson Syndrome. We are going to discuss what Plummer-Vinson Syndrome is, who gets it, why it is important to identify those affected, how it is diagnosed, its pathogenesis, and how we treat these patients.

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What: Imagine you have a patient present to clinic with a 3-month history of dysphagia. You inquire further and find out they have difficulty-swallowing solids. The dysphagia is most noticeable with hard solids such as meat or bread. On chart review the patient recently saw their primary care provider 4 months ago and was diagnosed with iron deficiency anemia. You send the patient for an EGD and you find an esophageal web. You then think of the classic triad of iron deficiency anemia, dysphagia, and a cervical esophageal web. This is Plummer-Vinson syndrome! The esophageal web is a thin eccentric membrane consisting of two layers of mucosa with a small fibrous tissue between them (without any muscular tissue) that protrudes into the esophageal lumen and causes dysphagia. The dysphagia is typically gradual, painless, and intermittent. Patients most commonly point to the neck, at or above the suprasternal notch, as the location of the obstruction. Typically patients present with solid dysphagia and slowly progress to liquid dysphagia, over years.

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There are multiple other clinical features that can be seen in PVS, which include glossitis (inflammation of the tongue), angular cheilitis (inflammation at the corner of the mouth) and koilonychia (spoon nails) from the iron deficiency anemia. Less commonly your patient may also have splenomegaly and thyroid enlargement.

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Who: Women are affected more frequently than men, and it typically presents in between the ages of 40-70 years old.

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Why: Along with treating the dysphagia and iron deficiency anemia, it is important to identify cases of PVS because these patients have an increased risk of both esophageal and pharyngeal squamous cell carcinoma. The risk of cancer progression is 3-15% and most commonly occurs in women between the age of 15 and 50 years old.

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How: The pathogenesis of PVS is not fully understood. There are several hypotheses for the pathogenesis of PVS, but what is known is that it is the IDA anemia that causes PVS and not the PVS causing IDA.

## Slide 7

Dx: PVS can be diagnosed by barium esophogram, videofluoroscopy, and upper endoscopy. In order to obtain the best information from barium swallow, a large bolus of thick barium should be given and images should be obtained from a lateral view while standing. The web will then appear as a thin projection in the post-cricoid region or in the upper esophagus with a dilated proximal segment and a normal or narrowed distal segment. They are usually solitary and located on the anterior portion of the esophagus but they can be posterior or even circumferential. Upper endoscopy is less sensitive for the detection of esophageal webs as they can be easily missed due to their proximity to the upper esophageal sphincter. When visualized on upper endoscopy it appears as a smooth, thin membrane. Videofluoroscopy can also be used to visualize the esophageal web but endoscopy has the advantage of being diagnostic and therapeutic.

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Rx: The treatment for plummer vinson syndrome is treatment of the iron deficiency anemia with iron supplementation—remember, iron deficiency anemia causes plummer vinson syndrome. Iron repletion may lead to rapid improvement in the dysphagia even before the anemia is corrected. Additionally the patient should be evaluated for the etiology of their iron deficiency anemia, such as menstrual bleeding, GI malignancy, iron malabsorption, and nutritional deficiency. In patients whose dysphagia is not relieved by iron supplementation alone, dilation can be performed. Some patients having relief of dysphagia after a single balloon dilation! Some suggest annual surveillance upper endoscopy for esophageal malignancy.

In summary, PVS is a triad of dysphagia, iron deficiency anemia, and cervical esophageal webs that develops secondary to the iron deficiency anemia. It is treated with iron supplementation and occasionally, esophageal web balloon dilation. Those with PVS have an increased risk of esophageal and pharyngeal squamous cell carcinoma, which stresses the importance of making the diagnosis early and arranging regular follow-up EGDs.