



SIMULTANEOUS OCCURRENCE OF UPPER AERODIGESTIVE TRACT MALIGNANCIES WITH POSTCRICOID WEB – OUR CENTRE EXPERIENCE

Gastroenterology

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KEYWORDS

INTRODUCTION:

Plummer-Vinson syndrome or Paterson-Brown-Kelly syndrome is characterized by dysphagia, iron deficiency anaemia and postcricoid oesophageal web^{1,2}. The increased incidence of upper aerodigestive tract carcinoma in patients with Plummer-Vinson syndrome has been well established. The reported rates range from 4% to 16%, with almost all cases occurring at the postcricoid location³. An esophageal web is a thin (<2 mm) eccentric membrane that protrudes into the esophageal lumen. Esophageal webs are covered with squamous epithelium and most commonly occur anteriorly in the cervical esophagus, causing focal narrowing in the postcricoid area.

Etiopathogenesis of Plummer-Vinson syndrome is unknown. The most important possible etiological factor is iron deficiency. Other possible factors include malnutrition, genetic predisposition or autoimmune processes. Recognition of Plummer-Vinson syndrome is important because it is a risk factor for developing esophageal or pharyngeal squamous cell carcinoma. Other findings that may be present in patients with Plummer-Vinson syndrome include glossitis, angular cheilitis, koilonychia, splenomegaly, thyroid enlargement, and symptoms of iron deficiency anemia such as fatigue and weakness. On upper endoscopy, an esophageal web appears as a smooth, thin membrane that is usually noncircumferential³.

Plummer-Vinson syndrome can be treated effectively with iron supplementation and mechanical dilation. Since Plummer-Vinson syndrome is associated with an increased risk of squamous cell carcinoma of the pharynx and the esophagus, the patients should be followed closely⁴.

Exact data about incidence and prevalence of the syndrome are not available. In the first half of the 20th century Plummer-Vinson syndrome seemed to be common in Caucasians of Northern countries, particularly among middle-aged women, but now the spectrum is widening⁵.

It was shown that the majority of patients with a post-cricoid web have evidence of iron deficiency but that only about 10% of patients with iron deficiency develop post-cricoid webs⁶.

From this study at our center we noted that there is an increased occurrence of esophageal malignancies (non postcricoid region) and stomach malignancies with postcricoid web. This study was proposed to show association of lower esophageal malignancies with esophageal webs in addition to upper esophageal malignancies.

AIM OF THE STUDY

To determine incidence of post cricoid web and its association with upper aerodigestive tract malignancies at our centre.

Study Design:

Prospective, analytical study.

Place and duration of Study:

At Department of Digestive Health and Diseases (DDHD), Kilpauk Medical College, Chennai. From January 2016 to June 2017.

METHODS:

In a retrospective analysis, we reviewed the case records of 100 consecutive patients with dysphagia, anemia and postcricoid web

diagnosed for the first time on video endoscopy at our center (DDHD, Government Peripheral Hospital Annanagar, Chennai) from the period 1/2016 to 6/2017 (over the period of 18 months). The endoscopic features and the biopsies of associated lesions were analysed.

A detailed clinical history of each patient was taken from the patient and a close accompanying relative regarding the present complaints and the past illnesses. The history specifically included presence or absence of dysphagia, odynophagia, fatigue, weight loss, vomiting, regurgitation and chest pain.

Routine labs were carried out for each patient including complete blood count, peripheral smear, erythrocyte sedimentation rate, random blood glucose and serum iron profile. Imaging in form of chest radiography and barium swallow in certain patients.

Inclusion criteria:

All adult patients admitted with diagnosis new onset dysphagia showing post cricoid web on upper GI endoscopy after applying exclusion criteria.

Exclusion criteria:

1. Age < 18 years
2. Patients with previously diagnosed and or dilated for post cricoid web

RESULTS:

Total 5369 patients underwent upper GI endoscopy during the period of analysis. Out of which 100 patients showed post cricoid web. Out of 100 patients with post cricoid web 81 were females and 19 were males. Most of the patients (n=44) were aged between 21 to 30 years.

Out of 100 patients total 11 patients showed lesions on upper GI endoscopy suggestive of malignancy. Total 8 lesions were recognised in oesophagus and 3 in the stomach. Histopathology results of all lesions were confirmatory for malignancy.

| | Total | Females | Males |
|---|-------|---------|-------|
| Esophageal malignancy | 8 | 6 | 2 |
| Stomach malignancy | 3 | 1 | 2 |
| Histopathology | Total | Females | Males |
| Adenocarcinoma of oesophagus | 4 | 3 | 1 |
| Squamous carcinoma of oesophagus | 4 | 3 | 1 |
| Adenocarcinoma of stomach | 2 | 1 | 1 |
| Gastro Intestinal Stromal Tumor (GIST) of stomach | 1 | 0 | 1 |
| Total | 11 | 7 | 4 |

Labs revealed that all 100 patients had anemia with haemoglobin ranging from 4 to 10.7. Out of 100 patients 79 showed features of iron deficiency anemia⁷ on peripheral smear which was confirmed by serum iron profile.

DISCUSSION:

Plummer-Vinson syndrome comprises dysphagia due to upper esophageal web and iron deficiency anemia. It is more common in middle-aged women^{9, 10}. The increased incidence of upper aerodigestive tract carcinoma in patients with Plummer-Vinson syndrome has been well established.

In our study total no of endoscopies for the period of 18 months –

5369, Total patients with detected postcricoid web first time on endoscopy – 100, females 81(81%), males – 19(19%), incidence of postcricoid web at our center – 1.86%, total biopsy proven esophageal malignancies associated with postcricoid web – 8(8%), stomach malignancies – 3(3%), esophageal malignancies in females -6(7.4 %), esophageal malignancies in males – 2 (10.52%), the incidence of biopsy proven stomach malignancies in females and males were – 1(1.23%), 2 (10.52 %) respectively.

In our study we found out that there was 11% prevalence of upper digestive tract malignancies in patients with post cricoid web which was similar to previous studies which is 4 to 14%. But we also recognised that at our center there is increased association of gastric malignancies with post cricoid web. There were 3 gastric malignancies out of total 11 malignancies (27%). Out of 3 patients detected with gastric malignancy 2 were males (66%). Out of 8 esophageal malignancies 6 were females (75%).

Our study revealed that there was 11% prevalence of digestive malignancies of upper GI tract with esophageal web. There was increased rate of esophageal malignancies is more common in females than males and gastric malignancies were more common in males as compared to females.

CONCLUSIONS:

There is a significant occurrence of esophageal and stomach malignancies in patients with postcricoid web presenting for the first time at our center. Esophageal malignancies were more common in females and stomach malignancies were more common in males. Hence it is mandatory to do Screening UGI endoscopy after Dilation of postcricoid web.

REFERENCES:

1. ELWOOD PC, JACOBS A, PITMAN RG, ENTWISTLE CC. EPIDEMIOLOGY OF THE PATERSON-KELLY SYNDROME. *Lancet* 1964; 2:716.
2. Sinha SK, Nain CK, Udawat HP, et al. Cervical esophageal web and celiac disease. *J Gastroenterol Hepatol* 2008; 23:1149.
3. Novacek G. Plummer-Vinson syndrome. *Orphanet J Rare Dis* 2006; 1:36.
4. Messmann H. Squamous cell cancer of the oesophagus. *Best Pract Res Clin Gastroenterol.* 2001;15:249–265. doi: 10.1053/bega.2000.0172
5. Wynder EL, Hultberg S, Jacobsson F, Bross IJ. Environmental factors in cancer of the upper alimentary tract. A Swedish study with special reference to Plummer-Vinson (Paterson-Kelly) syndrome. *Cancer.* 1957;10:470–482. doi: 10.1002/1097-0142(195705/06)10:3<470::AID-CNCR2820100309>3.0.CO;2-7.
6. Chisholm M, Ardran GM, Callender ST, Wright R. A follow-up study of patients with post-cricoid webs. *Q J Med.* 1971 Jul;40(159):409–420.
7. Bermejo F, Garcia-Lopez S. (2009) A guide to diagnosis of iron deficiency and iron deficiency anemia in digestive diseases. *World J Gastroenterol* 15: 4638–4643
8. Goel A., Bakshi SS, Soni N., Chhavi N. Iron deficiency anemia and Plummer–Vinson syndrome: current insights *J Blood Med.* 2017; 8: 175–184
9. Novacek G. Plummer-Vinson syndrome. *Orphanet J Rare Dis* 2006;1:36\
10. Dinler G, Tander B, Kalayci AG, Rizalar R. Plummer-Vinson syndrome in a 15-year-old boy. *Turk J Pediatr* 2009;51:384-6.