DYSPHAGIA : STUDY OF 15 CASES ASSOCIATED WITH IRON DEFICIENCY ANEMIA

* Abdul Raheem Al -Humrani

**Issam Al-Sherida

ABSTRACT

Dysphagia is a rare manifestation of iron deficiency anemia, it may occur due to development of esophageal web. The association of cervical esophageal web and iron deficiency anaemia is known as the Paterson-Brown-Kelly (or Plummer- Vinson) syndrome (PVS).

The aim of this study is to report rare cases of PVS syndrome and to throw light on other causes of iron deficiency anemia and dysphagia.

15patients(pts) with Dysphagia and iron deficiency anemia were studied in the period of January 2000 to December 2001.Out of 15 pts with dysphagia and iron deficiency anemia, 10 (66.6%) pts were females and 5 (33.3%) pts were male. Their ages ranged from 19-60 years with an average of 38.46 ±14.4SD, but most pts12 (80%) were in the age group of 19 to 49 years, only 3 (20%) pts were above 50 years.

An interesting finding was that esophageal webs were the commonest cause of dysphagia in those pts. These webs were seen in the upper third of esophagus .The histopatholgical exam showed benign nature. Out of 8 pts with esophageal web 7(87.5%) pts were females and 1(12,5%) pts was male.

All pts with esophageal web had an average age of 31±10.25 years. Marked weight loss was observed in 4(26.7%) pts, all of whom had malignant lesion on histopatholgical examination. Carcinoma of esophagus was the second common cause, which occurred in 3 (20%) pts, while carcinoma of cardia of stomach was reported in 1 (6.6%) pts.

An interesting observation was that achalasia cardia had been reported in a 55 years old female who underwent corrective surgery (heller procedure).

Conclusion: this study reported 8 rare cases of PVS, which might be not reported in our country. Pts with PVS carry high risk of postcricoid carcinoma, surveillance endoscopy is recommended. Carcinoma of esophagus was the second serious cause.

KEY WORDS : Dysphagia, Iron deficiency anemia, 15 cases study

INTRODUCTION

Dysphagia is a rare manifestation of iron deficiency anemia, it may occur due to development of esophageal web. [1] The association of cervical esophageal web and iron deficiency anaemia is known as the Paterson-Brown-Kelly (or Plummer- Vinson) syndrome (PVS). [2,3,4] Esophageal webs are thin membranes of connective tissue covered by normal squamous epithelium. Although they may occur anywhere along the oesophagus, they are usually situated in the upper third; [5] and frequently such patients may also have leukoplakia of the oropharynx and kolinychia. These webs regress with administration of iron therapy [3,6] and surgical management is rarely necessary. [2,6,7,8]

Although there are no aberrant epithelial changes in the web, PVS is associated with an increased incidence of post-cricoid carcinoma [2,7,8] and even gastric carcinoma had been reported as a rare complication[9,10]. Anaemia and depletion of tissue iron-containing enzymes usually develop in parallel but either may be present without the other. Haem-containing cytochromes in epithelial cells as well as muscle, liver, and kidney are depleted; mitochondrial protein synthesis and integrity may also be dependent on iron. [1].

* M.B.Ch.B. D.M. C.A.B.M., Assist. Prof. Of Medicine, Department Of Medicine \College Of Medicine \ University of Basrah \ Iraq - Basrah

** M.B.Ch.B. F.I.C.M.S. ENT , Lecturer \ Department of Surgery\ College Of Medicine \ University of Basrah \ Iraq - Basrah

The esophageal web of PVS may have been formed due to the restriction of dilatation of the esophageal wall, which result from repetitive inflamation and subsequent healing process. [5]

Achalasia is a disorder of oesophageal motility of unknown aetiology. Patients generally present with dysphagia for both liquids and solids.

The impaired motility is associated with a lack of peristalsis in the distal two thirds of the oesophagus, and incomplete or absent relaxation of the lower oesophageal sphincter in response to voluntary swallowing. These abnormalities lead to progressive dilatation of the oesophagus above the lower oesophageal sphincter. Achalasia is associated with increased incidence of esophageal carcinoma. [11] Occasionally malignant pseudoachalasia can be indistinguishable from primary achal-asia on routine clinical evaluation [12]

The aim of this study is to report rare cases of Plummer Vinson syndrome (Paterson-Brown-Kelly) and to throw light on other causes of iron deficiency anemia and dysphagia.

PATIENTS & METHODS

Fifteenth pts with Dysphagia and iron deficiency anemia were studied prospectively during the period January2000 to December 2001.All pts had been admitted to Al Jumhuri hospital in Basrah.

10 pts (66.6%) were female and 5 (33. 3%) pts were male. Their age range was from 19-60 years with an average of 38.46± 14.4SD. Complete history was taken and full physical examination was done.

investigations were requested to include hemoglobin, pack cell volume & hemoglobin electrophoresis. Bone marrow aspirate was stained with leishman and Prussian blue stain and examined by expert hematologist. Barium swallow examination, oesphagogastroduodenoscopy and biopsy were done for all pts. The biopsies submitted to histopatholgical examination by expert pathologist. Serum iron, iron binding capacity and serum ferittine were not done because of lack facilities. Iron deficiency anemia was diagnosed if hemoglobin was less than 12 gm \dl, hypochromic microcytic red cell on blood film exam, and depleted iron store on bone marrow examination.

RESULTS

Out of 15 pts with dysphagia and iron deficiency anemia, 10 (66.6%) pts were female 5 (33.3) pts were males. Their age range was from 19-60 years with an average of 38.46 ±14.4SD but most pts 12(80%) were in the age group of 19-49 years, and only 3(20%) pts were above 50 years. (table I) The duration of dysphagia ranged from 2-24 month. Kolinychias were observed in 6(40%) pts, mild splenomegaly was palpated in 2(13.3%) pts. (table 1)

An interesting finding was that esophageal webs (figure 1,2) were the commonest cause of dysphagia in those pts were studied. These webs were seen in the upper third of esophagus .The histopatholgical exam showed benign nature.

Out of 8 pts with esophageal web 7(87.5%) pts were female and 1(12,5%) pt was male. All pts with esophageal web were seen in the age group of 19-49 years with an average of 31±10.25SD. (table 1)

Marked weight loss was observed in 4 (26.7%) pts, all of whom had malignant lesion on histopatholgical examination. Carcinoma of esophagus (Figure 3,4) was the second commonest cause occurred in 4 (26.6%) pts, while carcinoma of cardia of stomach was reported in 1 (6.6%) pt. (table 2)

An interesting observation was that Achal-asia cardia (figure 5,6) had been reported in 55 years old female who was underwent corrective surgery (heller procedure). (table 2)

Table 3 shows that gastrointestinal causes were the commonest causes of iron deficiency anemia occurred in 6 (40%) pts this followed by nutritional causes that occurred in 4 (26.7%) pts.

DISCUSSION

This study reported rare cases of PVS in 8(53.3%) pts within the short period of the study, which suggests that oesophageal web formation wasn't very rare, and it may be under-reported in our country. This is consistent with the conclusion of Shand-A who administered that oesophageal web formation may be under-reported. [19]

Tobin Rw administered that web is one of the commonest anatomical abnormalities of esophagus ([20]

The eight pts in this study with PVS were in the age range of 19-49years and with an average age 31±10.25SD. This is consistent with other studies that PVS occurred under age of 50 years. [1,2,4,15] Anthony-R report case of PVS in 6years old child. Mansel administered that only seven cases of PVS had been reported in world literature between the age of 14-19 years [4] and Kitahara-S reported case of 56 years old women with PVS that necessitate surgery for her esophageal web [8].

Bohutove reported two cases of PVS at the age of 58and 81 years [7]. Geerlings reported PVS at 73 years.

Koilonychiais were observed in 6(40%) pts and splenomegally was detected in 3(13.3%) pts. this consistent with other studies [1]

An interesting observation was that rare form of carcinoma of cardia of stomach presented with dysphagia and iron deficiency anemia. This is reported in one pt in this study.

Achalasia cardia is an other rare case reported in 55years old female pt in this study and this pt under went heller surgery. Achalasia is associated with high incidence of carcinoma [11,18] and endoscopic surveillance is recommended. [11]

Despite pts with plummer Vinson syndrome had had negative histopathological exam of their endoscopical biopsies, but they are at risk of developing post cricoid carcinoma, [2,7,8,16] and even carcinoma of stomach was reported following PVS. [9,10] This suggest a need for long-term follow up for these pts, and surveillance endoscopy is recommended. [2,17]

One pt with iron deficiency and dysphagia had normal esophagogram, and normal endoscopic finding, so we couldn't find any anatomical explanation of his dysphagia.

This may be explained by the fact that iron deficiency may decrease the power of swallowing of the esophageal wall, and it can cause functional dysphagia. [21]

This study demonstrates that gastrointestinal causes are the commonest cause of iron deficiency anemia, which is consistent with other studies. [22-23]

Dicky–W reported two cases of celiac disease presented with PVS (23)

CONCLUSION

This study reported 8 rare cases of PVS, which might not be reported in our country. Pts with PVS carry high risk of postcricoid carcinoma, surveillance endoscopy is recommended. Ca esophagus was the second serious cause of dysphagia and iron deficiency anemia in this study.

Tables 1 shows the characteristics of pts were studied

Case no.	Age	Sex	Hb gm\dl	Duration of dysphagia	Cause of dysphagia	Physical finding
1	40	Female	6	6 month	Esophageal web	Kolinychia, angular stomatitis
2	23	Female	7	12 month	Esophageal web	Mild splenomegaly
3	19	Female	9	2month	Esophageal web	Kolinychia , mild splenomegally
4	49	Female	6.7	4 month	Esophageal web	Kolinychia
5	35	Female	9.1	12month	Esophageal web	Kolinychia
6	22	Female	8	4 month	Esophageal web	Kolinychia
7	30	Female	8.5	2 years	Unexplained	Normal
8	45	Female	7	3 month	Ca esophagus lower third	Normal
9	55	male	5	6 month	Ca esophagus mid third	No positive finding
10	21	Female	9	3month	Esophageal web	Kolinychia , wt loss
11	58	male	7.8	1month	Ca esophagus middle third	Wt loss
12	60	male	9	3month	Ca cardia stomach	Clubbing finger ,wt loss
13	35	male	8	8month	Esophageal web	No other positive finding
14	30	male	8	6month	Ca esophagus upper third	Wt loss, clubbing of finger
15	55	Female	10	2 years	Achalasia cardia	Kolinychia , normal wt

Table 2 shows the different causes of dysphagia in the pts were studied

Cause of dysphagia	No. of pts	%
Paterson Kelly syndrome	8	53.3
Ca esophagus	4	26.6
Achalasia	1	6.7
Ca cardia of stomach	1	6.7
Unexplained	1	6.7
Total	**15**	**100**

Table 3 shows the underling causes of iron deficiency anemias in pts with PVS syndrome

causes of iron deficiency anemia	no of pts	%
Gastrointestinal blood loss	6	40
Nutritional	4	26.7
Menstrual loss	3	20
Multiparous women	2	13.3
Total	**15**	**100**

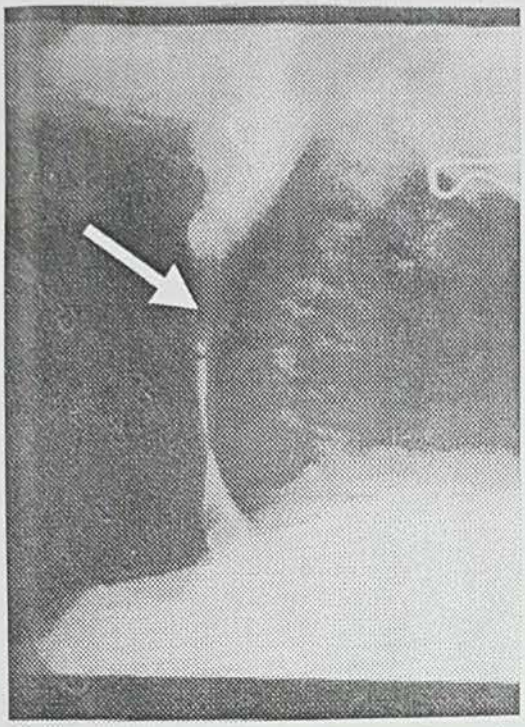

Figure 1 Shows Barium swallow with cervical esophageal web

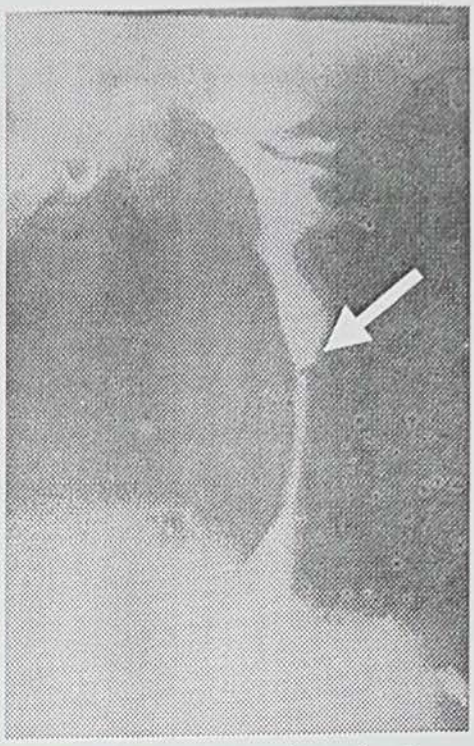

Figure 2 shows esophageal web

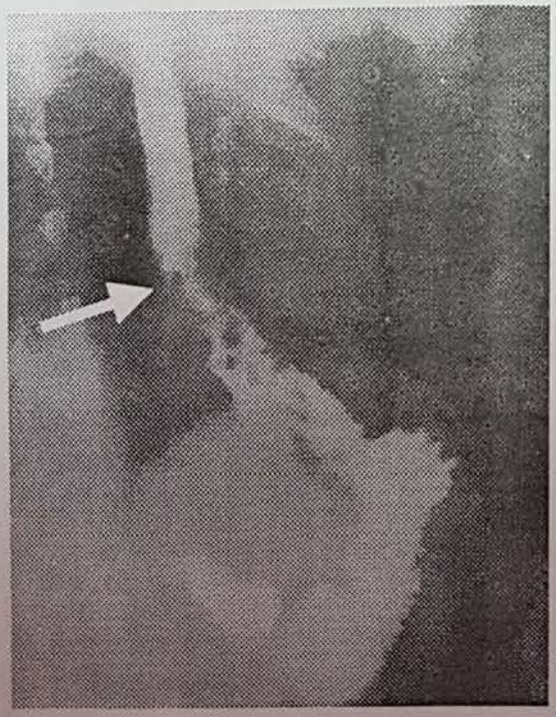

Figure 3 shows Ca of the lower third of the esophagus

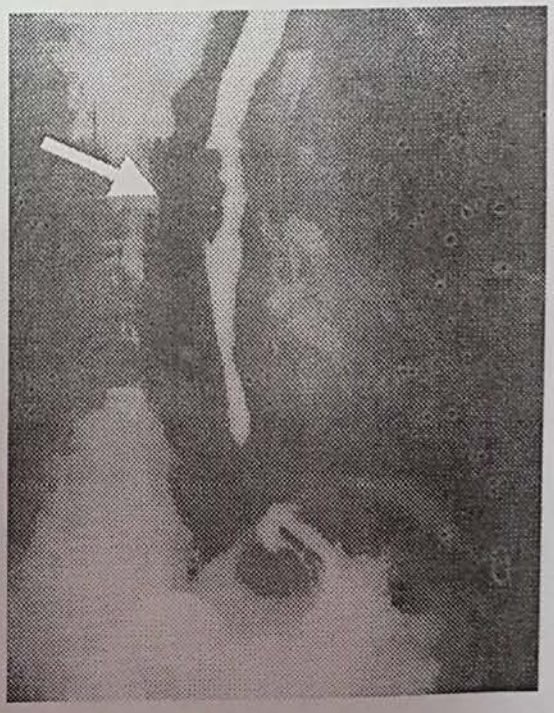

Figure 4 shows Ca of middle third of the esophagus

Figure 5 Shows Achalasia cardia

Figure 6 Shows Achalasia cardia

REFERENCES

1. Thomas P. Microcytic hypochropmic anemia in JB, Smith LH and Bennett JC Cecil textbook of medicine 21st ed. Philadelphia: W.B. Saunders (2000). 21st ed. Ch; 162 p: 657
2. Hofman-RM; Jaffr-PE Plummer Vinson syndromes. A case report and literature review Arch-Intern-Med.1995 Oct 9; 155(18): 2008-11
3. Bredenkamp-Jk; Castro-DJ; Mickel-RA Importance of iron repletion in the management of plummer Vinson syndrome Ann-otol-Rhinol-Laryngol.1990 Jan; 99(1): 51-4
4. Mansell-NJ; Jani-p; Bailey-CM. Plummer Vinson syndromes a rare presentation in child. J-Laryngol-otol.1999 May; 113(5): 475-6
5. Okamura-H; Tsutsumi-S; Inaki-S et al. Esophageal web in Plummer Vinson syndrome.Laryngoscope.1988 Sep; 98(9): 994-8
6. Kitahara-S; Ohmae-Y; Ogura-M et al .the operation of upper esophageal web in plummer Vinson syndrome: a case report. Auris-Nasus_Larynx.1999 0ct; 26(4): 495-500
7. Wahlberg-PC; Andersson-KE; Biorklund-AT; et al. Carcinoma of the hypopharynx: analysis of incidence and survival in Sweden over a 30-year period Head-Neck. 1998 Dec; 20(8): 714-9
8. Kitahara-S; Ohmae-Y; Ogura-M; Matumura-Y. The operation of upper esophageal web in Plummer-Vinson syndrome: a case report. Auris-Nasus-Larynx. 1999 Oct; 26(4): 495-500
9. Kitabayashi-K; Akiyama-T; Tomita-F; et al. Gastric cancer occurring in a patient with Plummer-Vinson syndrome: a case report. Surg-Today.1998; 28(10):1051-5
10. Nagai-T; Susami-E; Ebihara-T. Plummer Vinson syndrome complicated by gastric cancer: a case report. Keio-J-Med.1990 Jun; 39(2): 106-11
11. Dent-TL; Kukora-JS; Buinewicz-BR. Endoscopic screening and surveillance for gastrointestinal malignancy. Surg-Clin-North-Am.1989 Dec; 69(6): 1205-25
12. Moonka-R; Patti-MG; Feo-CV; et al. Clinical presentation and evaluation Gastrointest-Surg. 1999 Sep-Oct; 3(5): 456-61 of pseudoachalasia.
13. Martinez-C; Targarona-EM; Pseudoachalasia: a diagnosis to consider in the assessment of dysphagia Gastroenterol-Hepatol. 2000 Jan; 23(1): 14-5
14. Kepczyk-T; Cremins-JE; Long-BD; et al. prospective, multidisciplinary evaluation of premenopausal women with iron-deficiency anemia. Am-J-Gastroenterol. 1999 Jan; 94(1): 109-15
15. Anthony-R; Sood-S; Strachan-DR; Fenwick-JD A case of Plummer-Vinson syndrome in childhood J-Pediatr-Surg. 1999 Oct; 34(10): 1570-2
16. Greeling-SE; statius-van. Severe deglutition disorders and iron deficiency; .Ned-Tijdschr-Geneeskd.1991 Nov 9; 135(45); 2136-7
17. Peghini-M; Barabe; Jean-p; et al. Mucous diaphragm of the cervical esophagus relationship with the Kelly Paterson or the plummer Vinson syndrome. Med-trop-mars.1989 Oct-dec; 49(4): 343-7
18. Ribeiro-U; Posner-MC; Safatle-Av; et al. Risk factors of squamous cell carcinoma of esophagus. Br-J-Surg.1996 Sep; 83(9): 1174-85
19. Shand-A; Papachrysostomou-M; Ghosh-S. Dysphagia in esophageal intraluminal pseudodiverticulosis, fibrosis, dysmotilty or web. J-Gastroenterol-Hepatol. 1999 Nov; 11(11): 1331-3
20. Tobin-RW Esophageal rings, webs, and diverticula. J-Clin-Gastroenterol.1998 ;Dec; 27(4): 285-95
21. Okamura-H; Tsutsumi-S; Inaki-S; et al. Esophageal web in plummer Vinson syndrome.Layrngoscope.1988 Sep; 98(9): 994-8
22. Don C; Rockey M; and John P. evaluation of gastrointestinal tract in-patients with iron deficiency anemia. New England Journal of Medicine 1993 Dec 2; Vol 329 (23):
23. Dickey-W; Mcconnell-B. Celiac disease presented as plummer Vinson syndrome. Am-J-Gastroentrol.1999 Feb; 94(2): 527-9 .