A Rare Case of Purple Urinary Bag Syndrome -A Case Report

Dr. Lalitha Sridevi Redlam[1], Dr.R.Siddeswari[2]
[1,2] *Alluri Sita Ramaraju Academy and Sciences*

***Abstract*- Purple urinary bag syndrome is a uncommon condition with purple discoloration of urinary catheter system due to presence of indigo and indirubin in collected urine. Triad of key factors include High level of tryptophan in the gut, long term urinary catheterization ,Urinary tract infection (UTI) with bacteria possessing indoxyl phosphatase and sulphatase enzymes. It can be prevented by regular changing of Foleys catheter and can be managed with antibiotics and adequate hydration. If not treated adequately it may lead to sepsis and related complications**

I. INTRODUCTION

Purple urinary bag syndrome is a uncommon condition with purple discoloration of urinary catheter system. It is due to presence of indigo and indirubin in collected urine. It was first published in 1978[1]. It was observed by Sir Henry Halford's Bulletin in 1811.[2] Traid of key factors include High level of tryptophan in gut due to dietary intake or bowel stasis, Long term urinary catheterization ,Urinary tract infection (UTI) with bacteria possessing indoxyl phosphatase and sulphatase enzymes[3,4].

We describe the case of 73 year old female who was bedridden since 3 years due to history of left intertrochanteric fracture so she was kept on long standing indwelling Foleys catheter since 3 years. She had history of constipation. The purpose of the study is to emphasize importance of changing Foleys catheter regularly in bedridden patients and moreover to emphasize importance of avoiding indwelling catheters if possible.

II. CASE REPORT

A 73 year old female patient was brought to General medicine OPD with chief complaint of discoloration of urethral catheter system since 15 days , lower abdominal pain since 10 days , fever since 7 days. Patient has a history of left hip intertrochanteric fracture with proximal femoral nail insitu. She was catheterized with Foleys since 3 years and getting it changed for every 15days.

No co morbidities, no addictions

History of constipation present.

On examination she was conscious, oriented and vitals are stable and Foleys catheter insitu with purple colored urine and urobag.

Systemic examination:

P/A- soft, suprapubic tenderness present

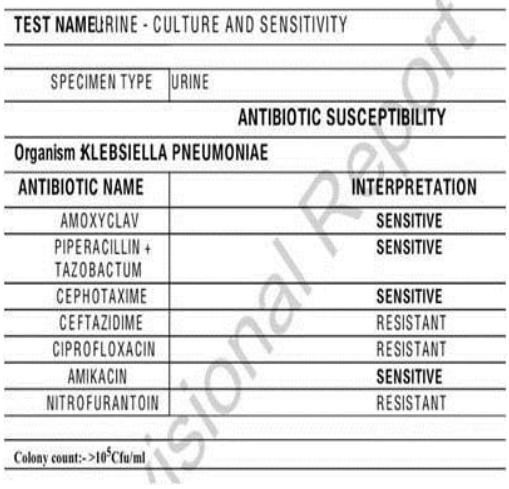
CVS-S1, S2 heard, no murmur

R/S-B/LAE present, no added sounds

CNS- HMF normal, GCS-15/15

Investigations revealed

- Total leukocyte count -13,800 cells / cu mm with neutrophilia
- Hemoglobin -12gm/dl
- CUE-pus cells -11-20/hpf
  Urobilinogen 3.0mg/dl
  Proteins – trace
  Glucose – negative
- Serum creatinine -0.8 mg/dl
- RBS-128mg/dl
- USG abdomen and pelvis showed chronic cystitis



TEST NAME URINE - CULTURE AND SENSITIVITY

SPECIMEN TYPE	URINE
	ANTIBIOTIC SUSCEPTIBILITY
Organism KLEBSIELLA PNEUMONIAE	
ANTIBIOTIC NAME	INTERPRETATION
AMOXYCLAV	SENSITIVE
PIPERACILLIN + TAZOBACTUM	SENSITIVE
CEPHOTAXIME	SENSITIVE
CEFTAZIDIME	RESISTANT
CIPROFLOXACIN	RESISTANT
AMIKACIN	SENSITIVE
NITROFURANTOIN	RESISTANT

Colony count:- >10^5Cfu/ml

III. DISCUSSION

Purple Urinary Bag Syndrome is an uncommon condition with purple discoloration of the urine catheter system. It is due to the presence of indigo and indirubin in the collected urine. It was first published in 1978, although it is thought that in 1812, King George 3 suffered a similar complaint [1,3]. Its prevalence is 9.8% in institutionalized patients with long-term urinary catheterization.[3,4,5] Triad of key factors for PUBS include High level of tryptophan in the gut due to dietary intake or bowel stasis, Long term catheterization ,Urinary tract infection (UTI) with bacteria possessing indoxyl phosphatase and sulphatase enzymes.[3,4]Gram Negative organisms are more commonly associated. Causative organisms are Providencia stuartti and rettgeri ,Pseudomonas aeruginosa ,Proteus mirabili ,Escherichiacoli,Klebsiellapneumonia,Morganella,Citrobacter species ,Enterococci.[6,9]

Etiopathogenesis is food containing tryptophan is digested in gut by bacteria to produce indole then converted to indoxyl sulphate by liver and then to indoxyl by urinary bacteria by indoxyl sulphatase , this indoxyl is converted to indigo (blue) and indirubin (red) giving purple color to urine . The urine does not appear purple prior to entering catheter. [3,4] Predisposing factors of PUBS are female gender, alkaline urine, bed bound debilitated people , PVC material[6,8] , Institutionalization. Interestingly, PUBS in presence of acidic urine has also been reported. [7] Unlike traditional UTIs, those associated with PUBS are more likely to be asymptomatic. But on culture may show significantly higher bacterial loads than those without the syndrome. This leads to greater levels of the necessary bacterial sulphatases and phosphatases necessary for PUBS. Clinical features are Purple discoloration of urinary catheter system, Fever, Urinary tract infection symptoms Management include Iv antibiotics, Iv fluids to correct dehydration ,Tab vitamin c, Changing of both Foley's and Urobag to silicone. Although relatively benign and easily treatable, it can be associated with significant morbidity and mortality. [1,3,8]

IV. CONSENT

The consent was taken and signed by respective patient.

V. CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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