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Group B *Streptococcus* infective endocarditis due to necrotic leiomyoma: a case report

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Introduction

- Group B streptococcus or streptococcus agalactiae is a gram-positive beta hemolytic streptococcus species which commonly colonizes the genitourinary tract of females and serves as a source for a variety of infections especially in women of child-bearing age.
- Although this reservoir contributes to a variety of infections such as maternal endometritis, neonatal sepsis and meningitis, group B strep endocarditis is increasing in frequency as source of infection in many non-pregnant women including rare manifestations of infective endocarditis. [6-8]
- Group B strep endocarditis is a rare occurrence and consists of the minority of endocarditis cases
 - Some data demonstrating an occurrence of 1.7% for all cases of bacterial endocarditis. [6]
 - Incidence of invasive GBS disease among nonpregnant women increased from 8.1 cases/100,000 population to 10.9 cases/100,000 population according to a population-based surveillance in the US from 2008-2016. [4,11]
- Risk factors for group B streptococcus endocarditis have been identified through literature review including malignant disease, diabetes, alcoholism, injection drug use, cirrhosis, and elective abortions. [6, 12-13]

Purpose

- Our case presents an uncommon complication of a uterine leiomyoma with a concurrent rare presentation of *Streptococcus B* endocarditis in a previously asymptomatic 39-year-old nulliparous female.

Methods/Literature Review

- Literature search via the PubMed database and SCOPUS was performed for reported cases of infective endocarditis caused by GBS that were associated with necrotic uterine fibroids, leiomyomas, or pyomyomas.
- The search was restricted from 1985 - March 2021.
 - The following key words were used in the search: 'endocarditis', 'group B streptococcus', 'Streptococcus agalactiae', 'uterine fibroids', 'leiomyoma', and 'pyomyomas'.
 - 11 cases of GBS endocarditis had been reported from 1985 to 2001 according to the review performed by Crespo [7].
 - Additional 5 cases of GBS endocarditis reported after 2001

Background

First Hospital Presentation:

- Treated for atypical pneumonia and ITP
- Incidental finding of enlarged uterus on CT
- Endometrial biopsy – benign pathology
- Treated with course of steroids (ITP) and levofloxacin (pneumonia)
- D/c – plans for total abdominal hysterectomy at future date

Case

HPI:

39-year-old female in her usual state of health until 5 days prior to presenting to OSH where she began to experience worsening SOB associated with dyspnea on exertion and a mild, nonproductive cough.

Presentation

PMHx: <ul style="list-style-type: none"> Iron deficiency anemia ITP (previous hsp) Uterine Leiomyoma 	Family Hx: <ul style="list-style-type: none"> Mother – DMII & “heart problems” Social Hx: <ul style="list-style-type: none"> Denied EtOH, tobacco, illicit 	Meds: <ul style="list-style-type: none"> Ferrous Sulfate Protonix Allergies: <ul style="list-style-type: none"> NKDA 	Vitals: <ul style="list-style-type: none"> T: 100.4 F BP: 175/92 HR 131 bpm RR: 31 bpm O2 sat: 90% @ 15 NRB 	Labs: <ul style="list-style-type: none"> WBC: 6.6 (n) Hgb: 8.6 (L) HCT: 27.7 (L) Plt: 126 (~L) MCV: 89.4 RDW: 20.8 (H) NT-proBNP: 10296
ROS: <ul style="list-style-type: none"> Constitutional: 5 lb weight loss – 1 month Respiratory: Worsening SOB x 5 days, nonproductive cough CV: No chest pain or palpitations GI: chronic abdominal fullness - no nausea/ diarrhea/ constipation GU: Normal menstrual cycles; monthly periods 7-8 days, no clots or cramping 		PE: <ul style="list-style-type: none"> Gen: mild resp. distress Lungs: clear breath sounds Cardiac: tachy, diastolic murmur Abd: nontender, hard mass palpated near umbilicus Ext: trace pedal edema 		
ECG: <ul style="list-style-type: none"> Tachycardia 	Imaging Cont.: <ul style="list-style-type: none"> CT A/P: several exophytic and pedunculated fibroids (13 cm and 6.5cm) – findings c/f degeneration TTE: severe aortic regurg 	TEE: aortic root abscess, severe AR, mild mitral and tricuspid regurg		
Imaging: <ul style="list-style-type: none"> CT Chest: Pericardial and pleural effusion – no PE 				

Hospital Course

Hospital Day 1 <ul style="list-style-type: none"> Pt requiring 15 L NRB w/ intermittent fevers CTA – c/f pericardial effusion and interstitial edema Started vanc/zosyn c/f potential pneumonia Admitted to ICU for close monitoring and diuresis 	Hospital Day 4 <ul style="list-style-type: none"> Transferred to UMC Gyn Onc service – repeat TTE c/f vegetation of AV TEE: aortic root abscess, severe AR, MV/TV regurg Transfer LSU med w/ ID, cards, CT surgery, gyn/onc Cultures speciated (GBS) → ceftriaxone 2g QD Plan for hysterectomy and endovascular intervention once cultures cleared 	Hospital Day 11 <ul style="list-style-type: none"> Blood cultures remained negative following transfer UMC – intermittent fevers CT surgery – findings of complete destruction of aortic leaflets w/ large veg and 1x1 inch abscess Mechanical aortic valve placed Severe mitral regurg and LV dysfunction s/p balloon pump removal <ul style="list-style-type: none"> Underwent LAD bypass w/ saph vein graft Required intra-aortic balloon support
Hospital Day 2 <ul style="list-style-type: none"> Quickly improving O2 require., off all O2 suppl. by end day 2 TTE: severe AR (plans for TEE) Blood cultures: Gram + cocci in clusters (later resulted GBS) 	Hospital Day 3 <ul style="list-style-type: none"> Gyn consulted w/ concern for degenerating fibroids as source of infection T/f patient UMC – availability of CT surgery at time of hysterectomy 	Hospital Day 12-14 <ul style="list-style-type: none"> Off IABP and weaned from pressors Started Amio w/ int. episodes A fib w/ RVR

Hospital Course Continued

Hospital Day 15-18 <ul style="list-style-type: none"> IR consulted for uterine fibroid embolization prior to hysterectomy Pt remained stable – stepped down from ICU day 17 Amiodarone d/c – initiated Warfarin therapy 	Hospital Day 19-24 <ul style="list-style-type: none"> Post surgical reduced EF – myocardial stunning Hysterectomy postponed until EF recovered D/c hospital day 24 w/ close f/u Complete 6 weeks abx 	Follow-up 1 month <ul style="list-style-type: none"> EF completely recovered Pt underwent successful hysterectomy Final path: benign findings Will require life-long Warfarin therapy due to mechanical valve
Final Dx: <ul style="list-style-type: none"> Group B streptococcus (<i>S. agalactiae</i>) endocarditis w/ perivalvular abscess 2/2 necrotic uterine fibroids 		

Discussion

- Our patient did not have any of the traditional risk factors for GBS endocarditis: including malignant disease, diabetes, alcoholism, injection drug use, cirrhosis, and elective abortions. [6, 12-13]
- A review of 11-obstetrical and gynecological-related cases of GBS endocarditis occurring between 1985 and 2001 was performed by Crespo colleagues. [7]
 - Only one case in the setting of an infected uterine fibroid (leiomyoma) like our case described. [1]
 - Other endocarditis cases manifested from therapeutic abortions (5 cases), after normal vaginal deliveries (1 case), secondary to Papanicolaou smear (1 case), or genital infections that were not specified (2 cases). [7]
- In a review of the only 14 cases of pyomyomas which had been reported from 1945-2001, the most common symptoms included abdominal pain, fever, weight loss, and anemia occurring in half of these patients – with Strep agalactia having been reported for only 1 of the 14 cases. Our patient presented with all these symptoms.

Conclusions/ Teaching Points

- In the context of our patient’s positive blood cultures and pathology results (after hysterectomy), one could suspect the introduction of this Group B strep endocarditis resulted from the bacterial seeding from necrotic uterine fibroids secondary to uterine biopsy which ultimately presented with acute CHF.
- In the event of a diagnosed case of group B streptococcus endocarditis, there should be consideration for an infected uterine source secondary to group B streptococcus bacteremia in a previously healthy non-pregnant female.

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