

A pain in the butt...

Case presentation:

- 50 year old man with a history of Diabetes Mellitus and Hyperlipidemia, “arthritis” of the spine and knee
- Admitted 22 Dec with one day history of acute left lower back pain radiating to the knee
- 3 days of intermittent fevers
- Works as a construction site supervisor
- No travel history
- Physical exam: no neurological deficits

Differential diagnosis:

- 1) Prolapsed intervertebral disc
- 2) Tuberculous spondylodiscitis
- 3) Acute schistosomiasis
- 4) This is way too early to say, let's have more information, please

Initial X-Rays 22 Dec



Initial Labs

Procedure	Results	Unit	Expected Ranges
Full Blood Count			
White Blood Cell	9.65 >	x10 ⁹ /L	3.26 - 9.28
Red Blood Cells	4.68	x10 ¹² /L	3.92 - 5.65
Haemoglobin	13.2	g/dL	12.6 - 16.9
MCV	81.2	fL	80.1 - 96.7
MCH	28.3	pg	24.5 - 34.3
MCHC	34.8	g/dL	30.8 - 38.4
Haematocrit	38.0	%	35.1 - 50.0
Platelets	233	x10 ⁹ /L	160 - 398
MPV	7.5	fL	6.6 - 9.9
RDW	11.6	%	10.5 - 15.9
Differential Counts			
Neutrophils %	71.5	%	43.4 - 73.6
Neutrophils	6.90 >	x10 ⁹ /L	1.41 - 6.83
Lymphocytes %	16.9	%	16.3 - 42.9
Lymphocytes	1.63	x10 ⁹ /L	0.53 - 3.98
Monocytes %	6.4	%	3.2 - 8.6
Monocytes	0.62	x10 ⁹ /L	0.10 - 0.80
Eosinophils %	1.5	%	0.0 - 7.8
Eosinophils	0.15	x10 ⁹ /L	0.00 - 0.72
Basophils %	0.8	%	0.1 - 1.2
Basophils	0.08	x10 ⁹ /L	0.00 - 0.11
LUC %	2.9	%	0.6 - 3.1
LUC	0.27	x10 ⁹ /L	0.02 - 0.29

Procedure	Results	Unit	Expected Ranges
ESR			
ESR	53 >	mm/hr	2 - 10
C-Reactive Protein			
C-Reactive Protein	78 >	mg/L	0 - 10
Liver Panel			
Albumin	38	g/L	38 - 48
Bilirubin, Total	5	umol/L	5 - 30
Bilirubin, Conj	2	umol/L	0 - 5
Bilirubin, Unconj	3 <	umol/L	5 - 25
AST	33	U/L	10 - 50
ALT	53	U/L	10 - 70
ALP	109	U/L	40 - 130
LDH	368	U/L	250 - 580
Procalcitonin			
Procalcitonin	0.25	ug/L	<0.50

Procedure	Results	Unit	Expected Ranges
Arthritis Screen			
Rheumatoid Factor	18	IU/mL	<20
Uric Acid	213 <	umol/L	220 - 540
Anti-Nuclear Ab	Negative		
Expected result : No antibody detected			

Procalcitonin has been proven to...

- 1) Have a sensitivity of about 85% for septic shock in the ICU?
- 2) Be reproducible regardless of which assay you use
- 3) Be markedly elevated in SIRS due to infection but not in burns or pancreatitis
- 4) Be elevated in children with severe viral meningo-encephalitis

Procalcitonin assay in systemic inflammation, infection, and sepsis: Clinical utility and limitations

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Objective: The use of procalcitonin (ProCT) as a marker of several clinical conditions, in particular, systemic inflammation, infection, and sepsis, will be clarified, and its current limitations will be delineated. In particular, the need for a more sensitive assay will be emphasized. For these purposes, the medical literature comprising clinical studies pertaining to the measurement of serum ProCT in various clinical settings was examined.

Data Source and Selection: A PubMed search (1965 through November 2007) was conducted, including manual cross-referencing. Pertinent complete publications were obtained using the MeSH terms *procalcitonin*, *C-reactive protein*, *sepsis*, and *biological markers*. Textbook chapters were also read and extracted.

Data Extraction and Synthesis: Available clinical and other patient data from these sources were reviewed, including any data relating to precipitating factors, clinical findings, associated illnesses, and patient outcome. Published data concerning sensitivity, specificity, and reproducibility of ProCT assays were reviewed.

Conclusions: Based on available data, the measurement of serum ProCT has definite utility as a marker of severe systemic inflammation, infection, and sepsis. However, publications concerning its diagnostic and prognostic utility are contradictory. In addition, patient characteristics and clinical settings vary markedly, and the data have been difficult to interpret and often

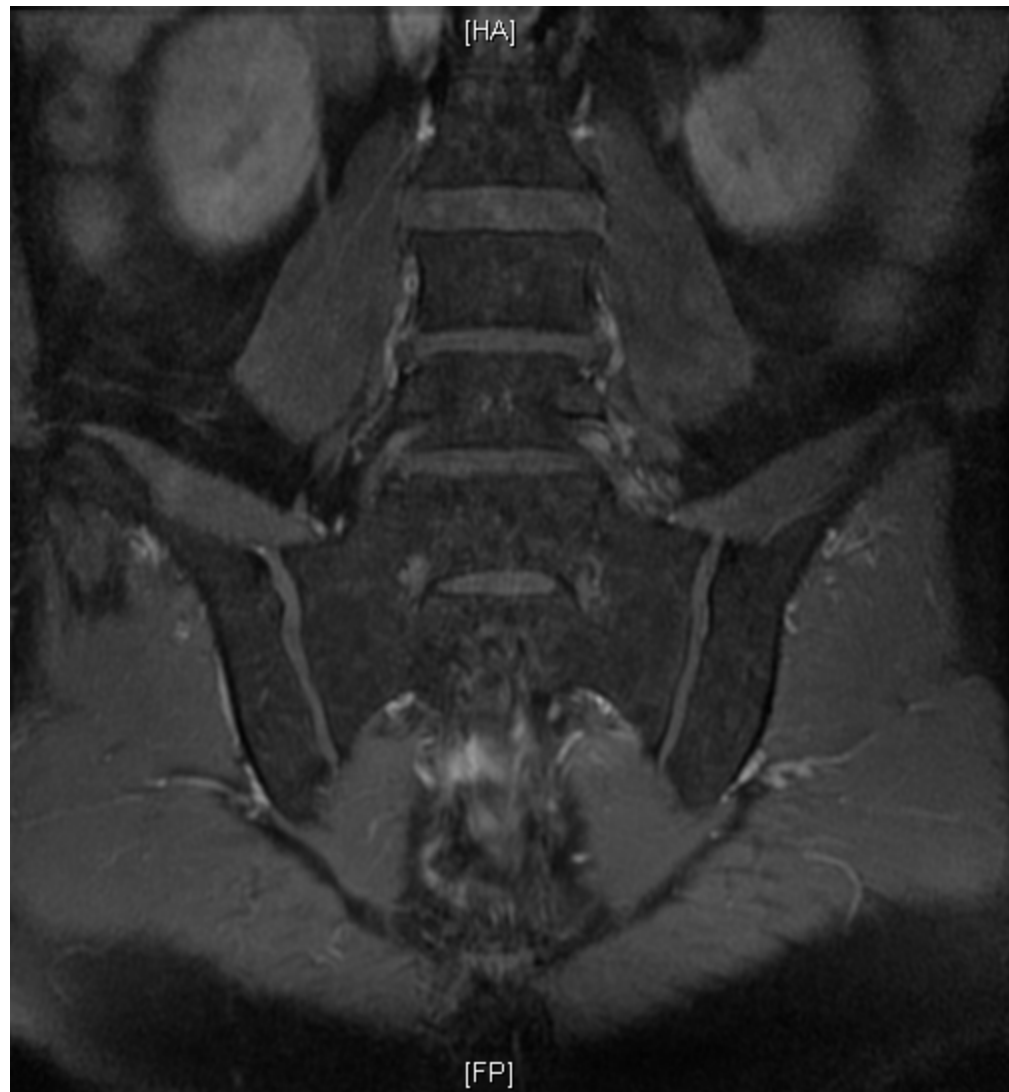
extrapolated inappropriately to clinical usage. Furthermore, attempts at meta-analyses are greatly compromised by the divergent circumstances of reported studies and by the sparsity and different timing of the ProCT assays. Although a high ProCT commonly occurs in infection, it is also elevated in some noninfectious conditions. Thus, the test is not a specific indicator of either infection or sepsis. Moreover, in any individual patient, the precipitating cause of an illness, the clinical milieu, and complicating conditions may render tenuous any reliable estimations of severity or prognosis. It also is apparent that even a febrile septic patient with documented bacteremia may not necessarily have a serum ProCT that is elevated above the limit of functional sensitivity of the assay. In this regard, the most commonly applied assay (i.e., LUMitest) is insufficiently sensitive to detect potentially important mild elevations or trends. Clinical studies with a more sensitive ProCT assay that is capable of rapid and practicable day-to-day monitoring are needed and shortly may be available. In addition, investigations showing that ProCT and its related peptides may have mediator relevance point to the need for evaluating therapeutic countermeasures and studying the pathophysiologic effect of hyperprocalcitonemia in serious infection and sepsis. (Crit Care Med 2008; 36:941–952)

KEY WORDS: procalcitonin; inflammation; infection; sepsis

Orthopods wanted to discharge patient

- He insisted that he was not better
- Did not want to “go home for the holiday”
- Wanted an MRI scan
- Asked for a medical consult

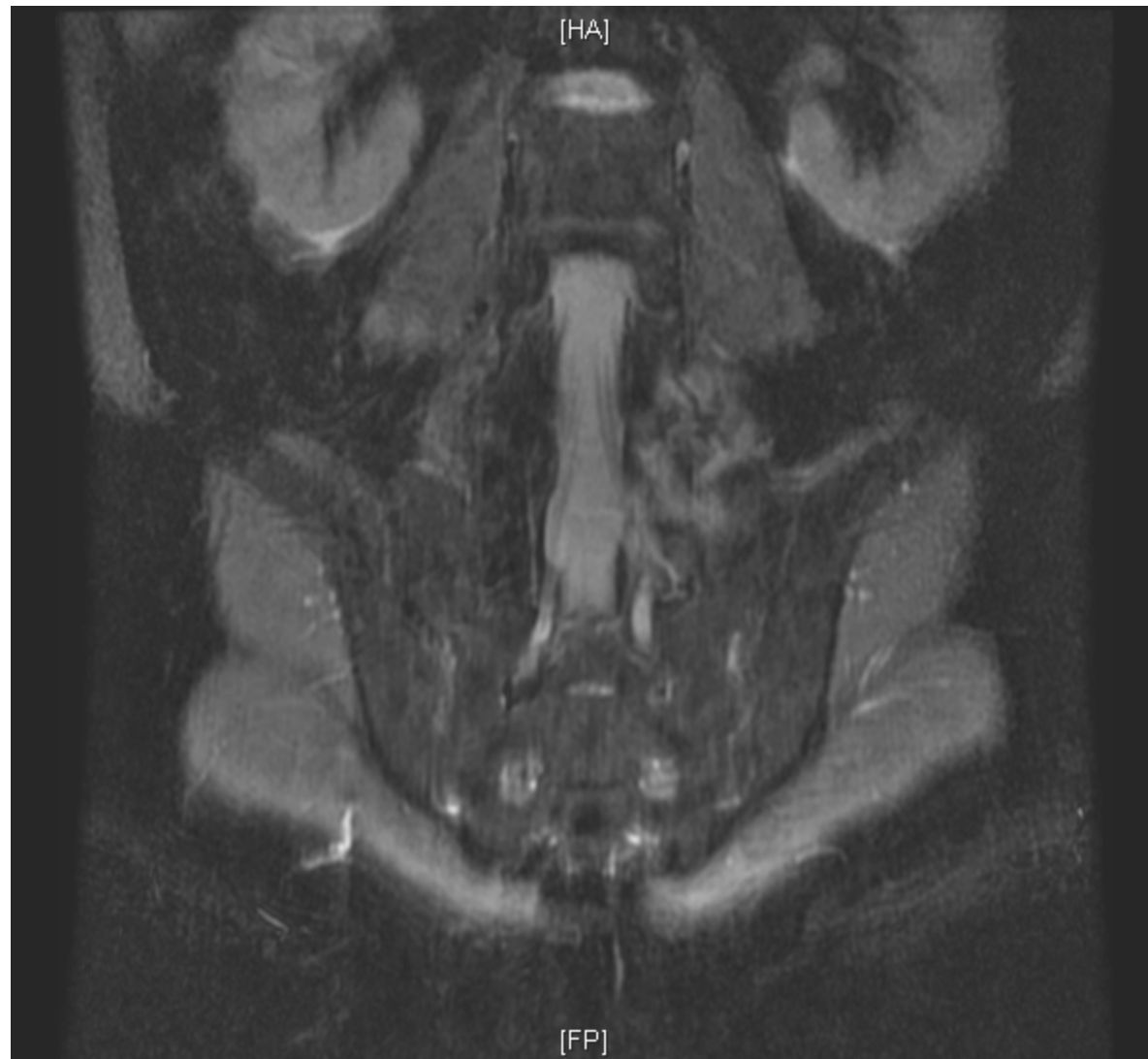
MRI was done



You are called in as the medical consultant....you....

- 1) Order a rheumatological battery including HLA B27
- 2) Ask for a psychiatric evaluation
- 3) Do a 24 hour uric acid urine collection
- 4)None of the above

Septic arthritis of the L5-S1 Facet Joint



The blood culture results come back...

Location	NW51
Receipt Date	03/01/2008 18:57
Specimen	
Procedure	Results
Blood O2 AnO2 c/s	
Sample Origin	Blood
Specimen comment	SFGDGF7 SGG7GZJD
Request status	Completed
Direct Exam	.
Visual Aspect	.
Neg AnO2 comment	No growth of anaerobes
Identification	.
Organism 1	Streptococcus bovis
Germ Comment	Isolated from both aerobic anaerobic bottles
Sensitivity 1	.
Organism 1	Streptococcus bovis
Penicillin MIC	Sensitive
0.125	mg/L
Ampicillin	Sensitive
Erythromycin	Sensitive

arthritis

Accession No.	8012337062	
Location	NW51	
Receipt Date	03/01/2008 18:57	
Specimen		
Procedure	Results	Unit
Blood O2 AnO2 c/s		
Sample Origin	Blood	
Specimen comment	SFGDGC5G SGG7GZK5	
Request status	Completed	
Direct Exam	.	
Visual Aspect	.	
Neg AnO2 comment	No growth of anaerobes	
Comment	Please refer to accession 8012337060 for susceptibility results.	
Identification	.	
Organism 1	Streptococcus bovis	
Germ Comment	Isolated from both aerobic anaerobic bottles	

arthritis

mg/L

Now, you....

- 1) Take a detailed family history
- 2) Do stool occult blood testing
- 3) Arrange for a colonoscopy
- 4) Get a HIV test
- 5) Do a 2D Echocardiography

Workup

- His father died of colon cancer and his brother has colonic polyps
- HIV screening was negative..

Receipt Date	16/01/2008 06:42	
Specimen		
Procedure	Results	Unit
Occult blood		
Sample Origin	Stool, third specimen	
Request status	Completed	
Visual Aspect	.	
Occult Blood	Positive	
Comment	Test methodology is the immunological detection of intact human haemoglobin.	
septic arthritis/progenic arthritis, specified site		

Colonoscopy done....

ENDOSCOPIC THERAPY/TREATMENT

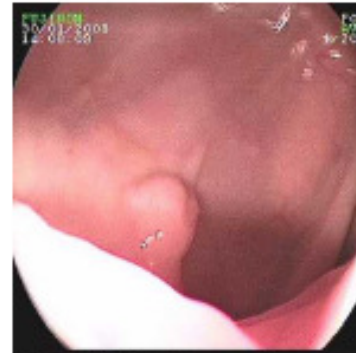
Polypectomy: Site - Sigmoid, Size - 5-9mm, Method - Hot Snare, Result - Success, Site - Sigmoid, Size - 5-9mm, Method - Hot Snare, Result - Success, Site - Rectum, Size - 10-14mm, Method - Hot Snare, Result - Success



Polyp at 35cm from anal verge



Suboptimal bowel prep



Polyp at 55cm from anal verge



Post polypectomy

ENDOSCOPIC DIAGNOSIS

Colon Polyp(s)

IVS to LVPW	1.11	RVDd	29
Ao root diam	35	LA dimension	41
LA to Ao	1.17	LV Mass Index	91

TTE

Doppler

Mitral E vel	68	PV S vel	42
Mitral A vel	76	PV D vel	38
Mitral E/A	0.8	PV S/D	1.11
Decel Time	195	PV AR vel	31
IVRT	0	RAP	10
LVOT Diameter	22	PASP	25
LVOT TVI	17	PAEDP	0
Doppler SV	65	Cardiac Index	3.16
Ao Vmax	0		

Final Diagnosis

Aortic valve vegetation; infective.

Aortic valve regurgitation; mild.

Normal chamber sizes.

Normal left ventricular systolic function.

Test Comments

Mobile mass present on the ventricular aspect of the aortic cusps, most likely infective vegetations. There is mild AR. Ward team informed.

TEE or is it TOE?

Doppler

Mitral E vel	0	PV S vel	0
Mitral A vel	0	PV D vel	0
Mitral E/A		PV S/D	0
Decel Time	0	PV AR vel	0
IVRT	0	RAP	10
LVOT Diameter	0	PASP	0
LVOT TVI	0	PAEDP	0
Doppler SV	0	Cardiac Index	0
Ao Vmax	137		

Final Diagnosis

Vegetation; Aortic valve.

Aortic valve regurgitation; moderate.

Normal chamber sizes.

Normal left ventricular systolic function.

Test Comments

TEE was performed under conscious sedation (iv Dormicum 5mg) and topical anesthesia (lignocaine spray). It was uncomplicated and patient tolerated the procedure well. There were mobile echodensities attached to the 3 aortic valve leaflets, measuring 9.2X5.7mm, 8.2X6.6mm and 6.4X5.4mm. These were documented prolapsing into the ventricular side of the aortic valve and also attached to the aortic end of the leaflets. There was no obstruction but presence of moderate aortic regurgitation. The masses are most consistent with vegetations. There was a indwelling catheter in the right atrium but no evidence of vegetation on it.

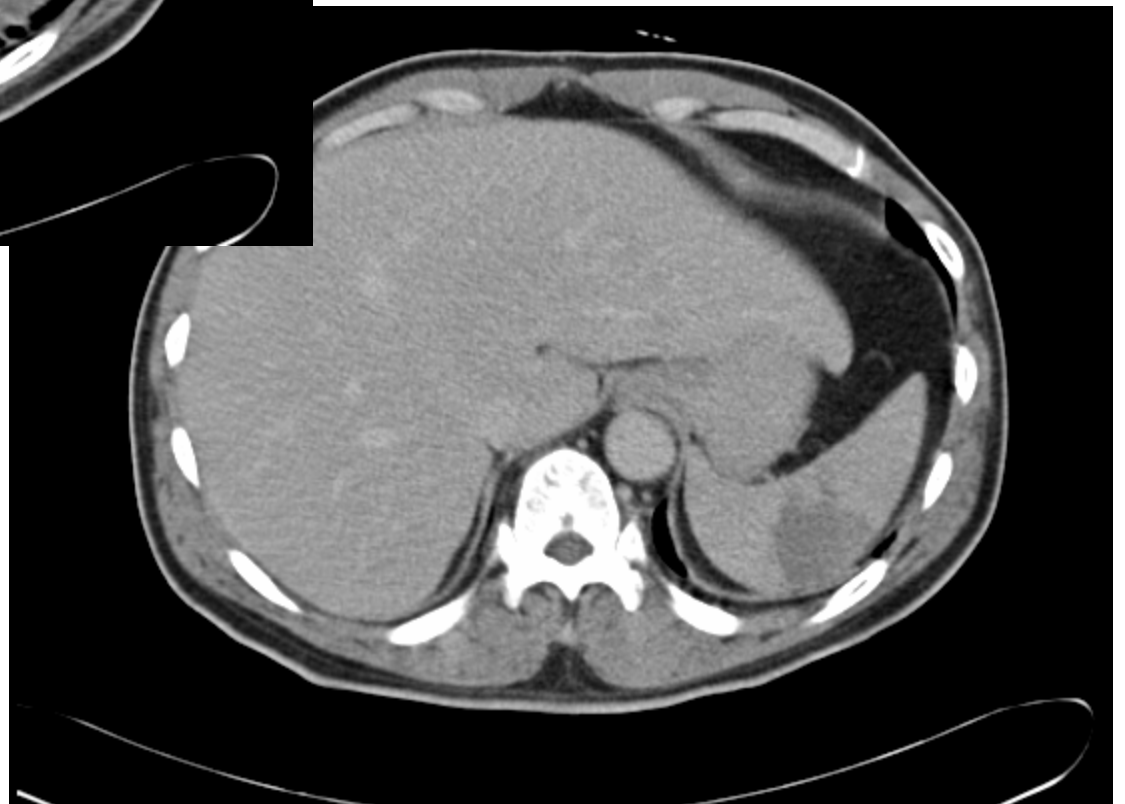
Treatment

- 1) Six weeks penicillin intravenously in hospital
- 2) 4 weeks penicillin in the outpatient iv therapy clinic
- 3) 2 weeks gentamicin and six weeks penicillin in OPAT clinic
- 4) 4 weeks ceftriaxone

He elected to stay in... was doing well until one day he had acute left flank pain

- 1) Acute radiculitis of the L1 nerve root
- 2) Renal infarct
- 3) Splenic infarct
- 4) Bowel infarct

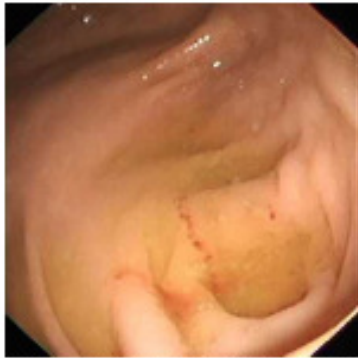
Urgent CT abd



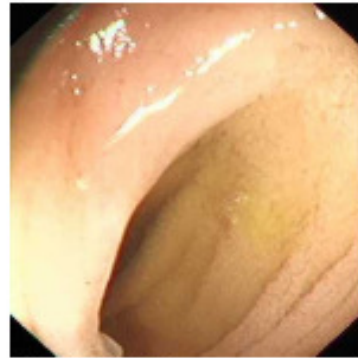
Treatment now?

- 1) Splenectomy
- 2) Valve replacement
- 3) Addition of vancomycin
- 4) Watch and wait?

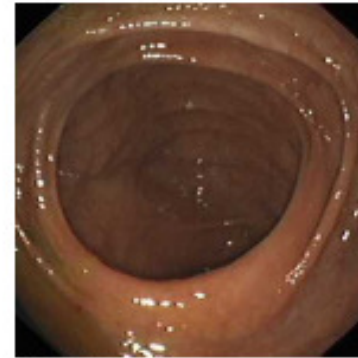
Repeat scope 23 April 2008



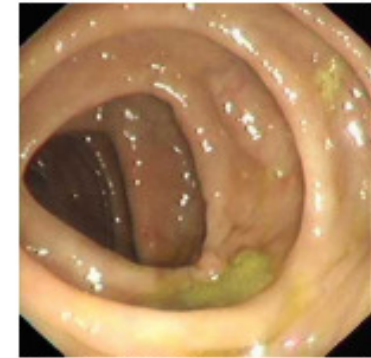
Appendix (red specks are scope abrasion)



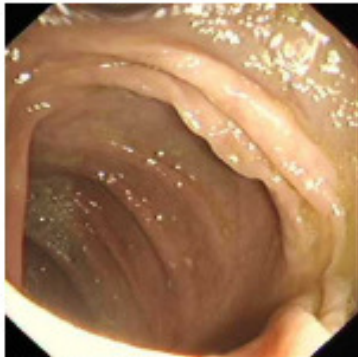
Terminal ileum



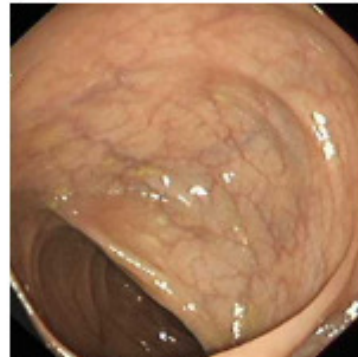
Caecum



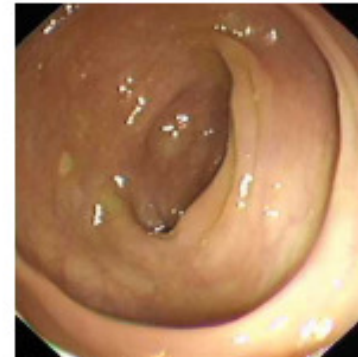
Transverse colon



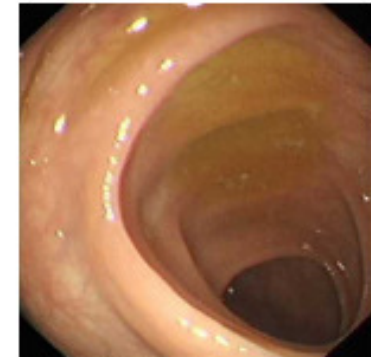
Descending colon



Descending colon

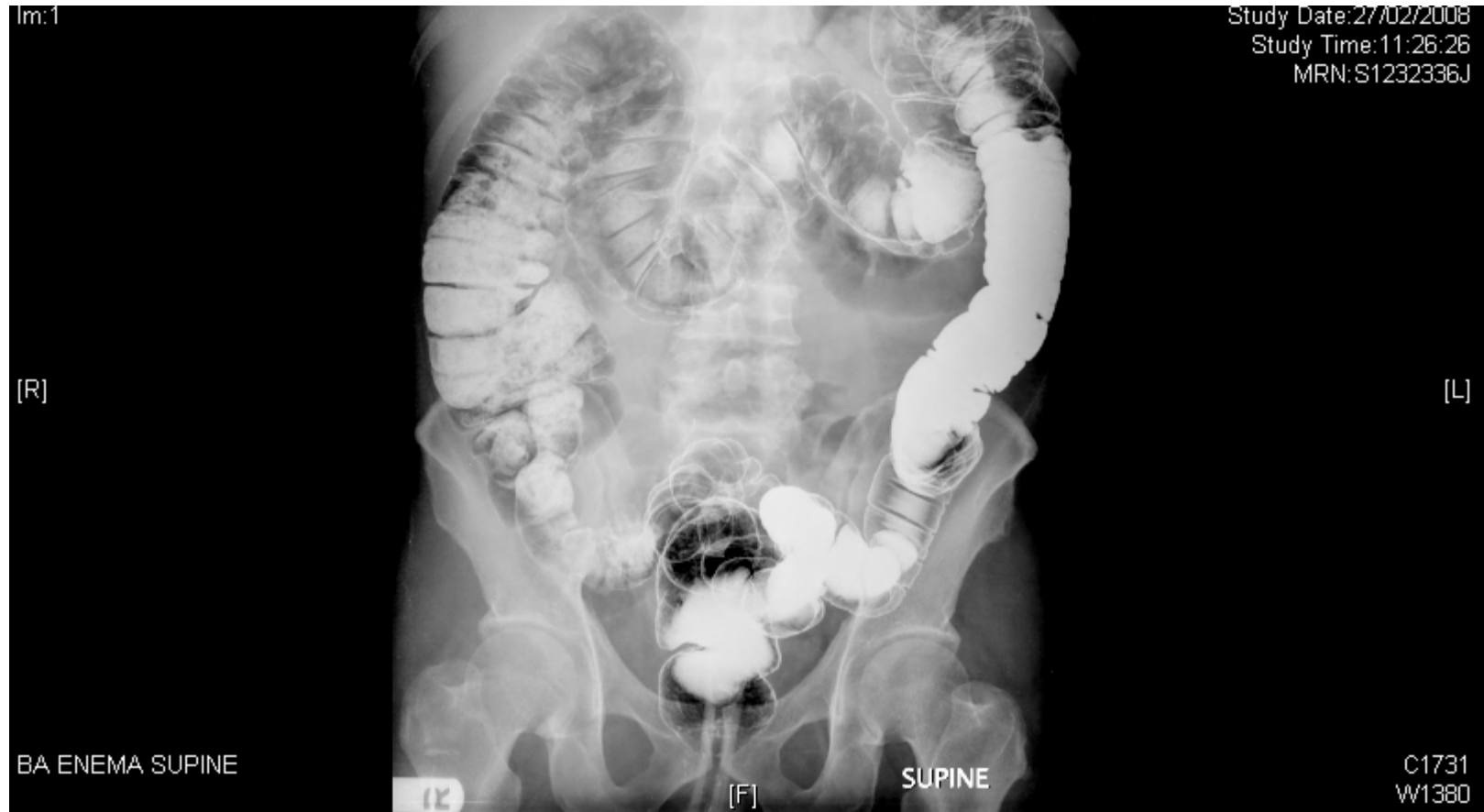


Sigmoid colon



Descending colon

Ba enema



He did get spine surgery....

IVS to LVPW	1.11	RVDd	27
Ao root diam	38	LA dimension	36
LA to Ao	0.95	LV Mass Index	107

Doppler

Mitral E vel	87.4	PV S vel	62.6
Mitral A vel	85.9	PV D vel	40.2
Mitral E/A	1.0	PV S/D	1.56
Decel Time	180	PV AR vel	24.8
IVRT	75	RAP	10
LVOT Diameter	22	PASP	27
LVOT TVI	22.8	PAEDP	0
Doppler SV	87	Cardiac Index	3.41
Ao Vmax	0		

Final Diagnosis

Normal chamber sizes.

Normal left ventricular systolic function.

Aortic valve vegetation.

Aortic valve regurgitation; mild to moderate.

Test Comments

Small vegetation 6mm noted on the ventricular surface of the left coronary cusp.

ARTICLE

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Emergence of endocarditis due to group D streptococci: findings derived from the merged database of the International Collaboration on Endocarditis

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Abstract The aim of the present study was to compare the epidemiological and clinical characteristics of *Streptococcus bovis* endocarditis with those of endocarditis caused by oral streptococci, using data obtained from a large international database of uniformly defined cases of infective endocarditis. *S. bovis*, a well-known cause of infective endocarditis, remains the common name used to designate group D nonenterococcal streptococci. In some countries, the frequency of *S. bovis* endocarditis has increased significantly in recent years. Data from the International Collaboration on Endocarditis merged database was used

after 1989 ($P=0.0007$) and was 56.7% in France as compared with 9.4% in the rest of Europe and 6.0% in the USA ($P<0.00001$). Patients with *S. bovis* IE had more comorbidity and never used intravenous drugs. Complication rates, rates of valve replacement, and mortality rates were similar in the two groups. In conclusion, this study confirmed that *S. bovis* IE has unique characteristics when compared to endocarditis due to oral streptococci and that it emerged in the 1990s, mainly in France, a finding that is yet unexplained.