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4/9/1994 12:00:00 AM
Discharge Summary
Unsigned
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Report Status :
Unsigned
ADMISSION DATE :
04-09-94
DISCHARGE DATE :
05-26-94
CHIEF COMPLAINT :
Cean Leach is a 38 year old male who is admitted in transfer from the Morehegron Valley Hospital in Ville , Virginia for further evaluation and management of ac celerating chest pains syndrome .
Mr. Leach has a long and complex history of coronary artery disease .
He was without known cardiovascular illness until he suffered an acute anterior myocardial infarction in August of l988 .
He was treated at that time with TPA .
A subsequent cardiac catheterization revealed a 90% lesion in his proximal left anterior descending coronary artery and minor disease elsewhere in his coronary distribution .
His ejection fraction was in the mid-50's.
Because of angina following that catheterization , he ultimately underwent percu taneous transluminal coronary angioplasty of his left anterior descending corona ry artery .
He did well until he developed recurrent angina in March of l991 at which time r epeat catheterization demonstrated restenosis of his left anterior descending an d he underwent a second PTCA with good results .
He again did well until approximately late l992 .
Since that time , he has had multiple admissions to George'sdgot Medical Ce nter with recurrent chest pain .
He has ruled in for small R Q wave myocardial infarctions on many but not all of these occasions .
He has had a progressive decline in his left ventricular ejection fraction as me asured by non-invasive means with an echo ejection fraction in the low 40's and radionuclide ejection fraction estimated in August of l994 at 31% .
He was admitted to George'sdgot Medical Center with a typical episode of th is discomfort in October of l994 .
He was transferred at that time to the Ph University Of Medical Center .
That was his first Ph University Of Medical Center admission .
Because of Mr. Leach 's history and the fact that multiple cardiac catheter izations prior to that transfer had failed to demonstrate fixed epicardial coron ary disease , it was decided that he should undergo provocative testing to evalu ate whether or not he had coronary artery spasm and / or impaired coronary flow reserve .
His angiograms from Morehegron Valley Hospital from his four prior catheterizati ons were reviewed and the patient was gradually tapered off all of his vasoactiv e medications .
He was taken to the Catheter Laboratory on October 13 , 1994 .
There he had a right heart catheterization with unremarkable intercardiac pressu res .
Repeat coronary angiography once again failed to demonstrate any significant obs tructive lesions in either his dominant right coronary artery or his left corona ry system .
He then underwent a Doppler Coronary Flow study which demonstrated impaired coro

nary flow reserve .
Specifically , his coronary flow maximally increased by a factor of 2-2.5 wherea s a normal response is considered to a 3-4 fold increasing in coronary flow to m aximal stimulus .
Following the coronary flow studies , he was given greater doses of intracoronar y ergonovine to assess his susceptibility to coronary artery spasm .
He had a normal response to ergonovine that is he had diffuse narrowing of his c oronary arteries without induction of focal spasm .
However , he did develop typical anginal discomfort which was easily reversed wi th intracoronary nitroglycerin .
It was felt that the time that this study was most consistent with a syndrome of impaired coronary flow reserve or microvascular angina .
He was treated with increasing doses of two calcium channel blockers and gradual ly ambulated in the hall without discomfort and was discharged to home .
Following that admission in October he had a symptom free interval which lasted a couple of months .
Starting in the October of l994 , he once again started having recurrences of hi s typical anginal discomfort .
This occurred at rest and with exercise .
He had multiple admissions to the Morehegron Valley Hospital once again ruling i n for a small R Q wave myocardial infarctions on a number of these occasions .
His medications were adjusted many times without adequate interruption of the pa ttern of increasingly frequent and increasingly severe episodes of pain .
His most recent admission to the Morehegron Valley Hospital is on April 5 , of 1 994 .
He had a prolonged episode of typical anginal pain and rule in for a small Q wav e myocardial infarction .
Because of the refractory nature of his chest pain and the failure of multiple d rug combinations to control his symptoms , he was transferred to Ph University O f Medical Center on 4-9-94 .
His medications that had been used individually or in combination include beta b lockers and Lodapine cardiazem , nifidepine and coumadin , aspirin , cyclopadine and seratonin antagonists .
There is no history of drug abuse or smoking .
Of note , his brother had a myocardial infarction in his late 20's .
There is no other family history of premature coronary disease or history of str oke or deep venous thrombosis suggestive of hypercoaguable state .
Of note , his prior work-up has also included screening test for hypercoaguabili ty with normal levels of protein S and C and an unrevealing right ventricular un der myocardial biopsy .
His medications on admission included Isordil , Lovastatin , aspirin , heparin a nd Lodapine , Cardizem and Lasix .
PHYSICAL EXAMINATION :
He looked generally well .
His blood pressure l60/90 .
His heart rate was 88 .
His jugular venous pressure was normal .
His chest was clear and his carotids were brisk and his cardiac examination reve aled a soft systolic flow murmur .
His abdomen was obese with no palpable organomegaly .
His femoral pulses were l+ and equal without bruits .
He had trace peripheral edema and excellent peripheral pulses .
His initial laboratory values included a sodium of l38 .
Potassium of 3.2 .
Normal chloride and CO2 .
His BUN was 12 and his creatinine was 1.1 .
Glucose was l55 although subsequent determinations were normal .
His fasting cholesterol was 174 with an HDL of 35 and an LDH of 97 .
His liver function tests were normal with the exception of his LDH which was mil dly elevated to 222 .

His hematocrit was approximately 39 with an unremarkable differential and normal platelet count .
His sedimentation rate was 32 and was 40 on repeat testing .
HOSPITAL COURSE :
the primary concern upon Mr. Leach 's transfer was that despite the fact th at he had multiple previous catheterizations over the prior two years that he ma y have redeveloped obstructive coronary artery disease .
It was ; therefore , felt appropriate to start his repeat work-up by repeating h is cardiac catheterization and coronary angiography .
To that end , he was taken to the Cardiac Catheterization Laboratory on 4-10-94 , there he underwent right and left heart catheterization , coronary angiography and left ventriculography .
The right heart catheter which was done using a Swanz Ganz catheter advanced to 8 French sheath and right femoral vein revealed a mean right atrial pressure 3 m m of mercury and a pulmonary capillary wedge pressure of 12 mm of mercury .
The left ventricular pressure was l05/12 .
Coronary angiography revealed a picture which was essentially unchanged from Oct ober of l994 .
That is there was no obstructive large vessel or coronary artery disease althoug h there were some diffuse luminal irregularities .
Left ventriculography revealed a large area of antero lateral and apical hypokin esis to akinesis with an estimated ejection fraction of 35% .
Impression at the time of his catheterization was that the precise etiology of h is chest pain remained rather enigmatic .
He was ; therefore , seen in consultation by Dr. Lato Tikfreierm of the Hematolo gy Service to evaluate him further for a possible hypocoagulable condition versu s primary and secondary platelet abnormality which could explain his recurrent c oronary events .
After an extensive evaluation including in vitro testing and flow cytometry of M r. Leach 's platelets , it was ultimately determined that he did in fact ha ve a primary platelet defect .
Specifically , his platelets were not affected by aspirin and showed spontaneous hyperaggragability .
This was utilized in making some changes in Mr. Leach 's regiment .
Specifically his aspirin was discontinued and he was put back on ticlopidine at a higher than ordinary dose at 500 mg. b.i.d.
Repeat in vitro testing of Mr. Leach 's platelets suggested that although t hey remained refractory to aspirin , they did demonstrate reduced hyperaggragabi lity spontaneously which was felt to be possible reflective of the ticlopidine e ffect .
While in the hospital , Mr. Leach continued to nearly daily episodes of chest pa in .
These were generally spontaneous in nature and lasted anywhere from several minu tes to nearly an hour duration .
There were typically improved but not completely eradicated with sublingual nitr oglycerin and generally required i.v. narcotics for complete pain relief .
Because of the ongoing nature of his pain .
Multiple changes and additions were made to his drug regimen .
He was tried on theophylline and imipramine without real change in his chest pai n syndrome .
He was tried on a variety of different combinations of calcium channel blockers including amlodipine and diltiazem and lodipine and verapamil .
Amlodipine and bepridil all without marked change in his clinical syndrome .
The rest of his hypercoagulable work-up revealed that he had nearly normal level s of clotting factors , specifically , his antithrombin 3 of level was lll with a reference range of 80-120 .
Protein C was 85 with a reference range of 70-140 .
Protein S was l14 with a reference range of 70-140 .
Plasminogen was slightly high at l51 with upper limit of normal being l30 .
Factor 8 was likewise slightly high at 249 with a reference range of 50-200 .

Thrombin time and repalase time were normal .
It was felt that these results were non-specific and may represent just an acute phase reactants .
His anti-cardio lipen antibodies both IGM and IGG were within normal range .
His APC resistance was normal .
He was seen in consultation by both Rheumatology and Endocrinology to evaluate the possibility of primary connective tissue disease an / or possible a theochromocytoma .
Rheumatology felt that there was no good evidence of a primary vasculitic process as the source of his presumed small vessell coronary disease and no further rheumatologic work-up was undertaken .
He had multiple 24 hour urine tests performed to evaluate the question of theochromocytoma , these demonstrated mild elevations of some urinary catacholomines , but it was felt that this could well represent a reaction to the complex medical regimen that he was having as well as the recurrent episodes of pain themselves .
It was not felt that he had good evidence of theochromocytoma .
His compliment levels were normal and he had no evidence of hepatitis , B serologies which also measured to see if there was some chronic inflammatory process .

Because of the persistent nature of his pain and the inability to control it adequately on constantly changing a quite complex medical regimen , it was suggested that a sympathetic blockade be performed as a method of controlling his chest pain syndrome .
To evaluate the efficacy of this prior to commiting him to a permanent blockade procedure , a temporary sympathetic blockade was performed using a local anesthetic and stellate ganglion injection .
Prior to performing that an exercise tolerance test was performed on May 13 .
That study demonstrated that the patient was able to exercise for ten minutes of a standard protocol and stopped because of fatigue ; although he had no significant ST changes with exercise , he did experience his typical anginal chest discomfort which was ultimately relieved of the combination of sublingual nitroglycerin and i.v. morphine sulfate .
On the basis of that test , he underwent stellate block the following day .
That was performed in the pain clinic using l% lidocaine to the skin and l0 cc of Bupivacaine under fluoroscopic guidance at the level of T1 .
This produced a good sympathetic block with evidence of a rise in temperature in the left arm and ptosis and myosis of the left eye .
He was then taken directly from the pain clinic to the exercise laboratory and repeat exercise testing was done .
He once again exercised for ten minutes achieved the same rate pressure product and had no chest discomfort .
This encouraged his care takers to pursue a more permanent sympathetic blockade .
After extended discussions with pain service , Mr. Leach was brought back down to the pain clinic on October 27 .
There a catheter was placed at the level of T1 under fluroscopic guidance .
Once again Narcaine was injected to induce a sympathetic block .
The catheter was left in place for approximately 24 hours with recurrent injections maintained the sympathetic block and during that time he had no recurrent angina .
After extensive discussions with the patient , the pain service and thoracic surgery , it was felt appropriate to proceed with a surgical sympathectomy to relieve him of his intractable chest pain syndrome .
Therefore , on October 27 , the patient underwent left thorascopic thoracic sympathectomy by Dr. Aalv Sctroi .
He tolerated that procedure well and had no recurrent anginal pain throughout the rest of his hospitalization .
He had incisional pain which was well-controlled with a combination of Percocet and morphine sulfate and progressively ambulated and was discharged to home in g

ood condition free of recurrent angina on May 27 , 1995 .
DISCHARGE MEDICATIONS :
Ticlopodine 500 mg. p.o.b.i.d. Lovastatin 20 mg. p.o.q.d. Lasix 80 mg. q.d. Kayciel 60 meq b.i.d. Cimetidine 400 mg. b.i.d. Isordil 20 mg. t.i.d. and Lodopine 10 mg. q.d. a combination of Percocet , Morphine Sulfate elixir p.o. as needed .
DISCHARGE DIAGNOSIS :
1. Unstable angina secondary to syndrome X .
2. Hypertension and hyperlipidemia as well as epicardial coronary artery disease .
PRINCIPAL PROCEDURES :
Left thorascopic sympathectomy on May 21 and cardiac catheterization and coronary angiograph and left ventriculography on April 10 , 1994 .
Treadmill exercise testing X2 on May 13 and May 14 .
Left stellate ganglion sympathetic block on 5/14/94 and placement of a low catheter with sympathetic block on October 27 .
TRI I. MNONKOTE , M.D.
TR :
cp / bmot
DD :
06-02-94
TD :
06/02/94
CC :
Dr. Lato Tikfreierm of Pediatric Hematology .
Dr. Taarnna Lanceloilneg of the Cardiac Unit and Dr. Aalv Sctroi of Thoracic Surgery .
Dr. Center of Endocrinology .
Dr. Conrellie Koterudes , Medical House Officer .
Dr. Sta Center of the Pain Service .
Dr. Li Rhalttland c / o George'sdgot Medical Center , Aurie
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