

Nurse Practitioner Case Example



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The following activity is based on the standards of practice found in the [Nurse Practitioner](#) practice standard (pages 4-6).

Instructions

Select one specific client case from your clinical practice. All sections should be based on the same client case. Do not include any client or colleague identifiers. Please refer to the cno.org/qa for detailed instructions.

Please complete all fields. If something is not applicable to your case example, please indicate "not applicable", do not leave it blank.

Section 1: Client Case Overview

Provide an overview of your client, and reason for the NP-client interaction. Include any relevant past medical history and medication.

Semi-urgent referral: exertional chest pain NYD (not yet diagnosed). Referred after seeing family MD for same.

50M with new onset exertional chest pain, radiating to left arm and jaw, resolving with rest. Lasting no more than 10 minutes. Noted to occur with gym workouts and moderate activity, like going up stairs or emotional stress. Associated dyspnea. No associated palpitations. No previous cardiac history. Non-smoker. Limited alcohol intake (1-2 beers per week). No family cardiac hx. No pertinent past medical history. Non recent infections.

Ht: 5'10, Wt: 180lbs.

Past Medical History: Nil.

Medications: None. No OTC.

NKA.

Works as firefighter. Married, lives with wife and 2 children

Section 2: Health Assessment

NPs integrate an evidence-informed knowledge base with advanced assessment skills to obtain the information necessary for identifying client diagnoses, strengths, and needs.

Based on the client presentation, describe the health assessment you completed.

My exam includes an overall, general head-to-toe:

Neurological: alert and oriented to person, place and time.

Respiratory: Equal posterior, bilateral air entry to both lung bases upon auscultation. No adventitious lung sounds (crackles, rhonchi). Non-labored breathing/eupneic. No use of accessory muscles.

Cardiac: Auscultate for normal heart sounds (S1, S2) and no extra heart sounds (S3, S4 in context of CHF) or murmurs that could be indicative of valvular pathology (such as tricuspid regurgitation, mitral regurgitation,

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rheumatic heart disease). Apical pulse approximately 60BPM. JVP visible at clavicle (<3cm), with HOB at 45 degrees. Normal A wave (from atrial contraction), V wave (from atrial filling, during ventricular systole, non-exaggerated). No peripheral edema to lower extremities.

Gastrointestinal/Genitourinary: no nausea no vomiting - Abdomen soft, non-tender, non-distended. No organomegaly. Smooth liver edge/border.

Skin: Dry and warm to touch no diaphoresis

Mental health: history and level of stress and anxiety/ depression

What are some specific questions you asked the client, and why?

1. Is your chest pain exertional, non-exertional or both?
2. Is it associated with any other symptoms such as dyspnea, presyncope/syncope, extreme weakness, N/V, palpitations, and/or diaphoresis?
3. Have you identified any triggers of the CP?
4. How long does the CP last? How long does it take to subside?
5. What alleviates the CP?
6. Are you taking or have you ever taken nitroglycerin? If so, has it helped?
7. Are you currently taking baby aspirin?
8. What do you do for regular physical activity? Are you able to do all those activities or are you hindered by the CP? Which specific activities cause CP?

The first 8 questions allow me to have insight into how the CP occurs (P,Q,R,S,T) to better determine if there is more of a clinical picture of stable vs unstable angina, and whether or not I am concerned enough today to send for urgent cardiac risk stratification or if this can wait a few days.

9. Do you know of any family cardiac history, such as parents or siblings/first degree relatives? Has any of your family member's ever passed abruptly despite being healthy and young? (can be indicative of sudden cardiac death related diseases).
11. Have you ever routinely drank alcohol or used substances such as cocaine or stimulants?
12. Are you or have you ever been a smoker?

The second set of questions allow me to further risk stratify to determine if there are any underlying genetic or lifestyle risk factors that are concerning and warrant a discussion about modification at this time.

Section 3: Diagnosis

NPs are engaged in the diagnostic process and develop differential diagnoses through identification, analysis, and interpretation of findings from a variety of sources.

Discuss the investigations you ordered/performed, along with your findings.

12-lead ECG to ensure no glaringly obvious abnormalities that require immediate investigation (such as LBBB not previously known, arrhythmia). This patient has normal sinus rhythm and no ST-T wave abnormalities or Q waves. BP within normal limits (<135/<80mmHg).

I sent the patient for general lab work including:

- CBC r/o anemia, CP and dyspnea can be symptoms
- Electrolyte panel (Mg, K, Ca, Na) TSH Imbalance can cause arrhythmia and symptoms. Glomerular filtration rate baseline required if medications needed.

- I may add NT-pro BNP (brain natriuretic peptide) if there is suspicion of CHF component, but not standard. In this case, I did not order this.
- I also included lipid panel for risk stratification, including total cholesterol, LDL, HDL and triglycerides. I would do this for any patient over 40 y.o.
- High sensitivity troponin if CP during the visit. In cases of exertional chest pain of unknown etiology and low-risk, it is preferred to use outpatient stress exercise echocardiogram if there is no physical limitation as it is least invasive, no radiation exposure, cost effective and generally good yield with high sensitivity/specificity. Additional benefits is that it provides baseline exercise capacity, detection of valvular pathology and function, as well as, measurements for LVOT obstruction and pulmonary hypertension- All which help assist in determining the possible cause of the exertional CP.

All lab work and stress exercise echocardiogram came back normal. The images from the stress exercise echocardiogram were sharp and reliable and his exercise capacity was excellent, which further promotes the reliability of the test in his case. Given this, his risk of MI in the next 2-3 years is <1%. He developed the symptoms he has on initial presentation, but this did not reflect any abnormal findings on the continuous ECG or echocardiogram images, like wall motion abnormalities due to abnormal blood flow

Why did you choose these specific investigations?

My rationale for each test is outlined in the question above.

What features of the client's presentation led you to your top two (or three) differential diagnoses?

Generally, my differentials start broad and are narrowed based on testing and the information that these provide. In this case:

1. Coronary artery disease (CAD)
2. Underlying structural or functional cardiac abnormality, such as ventricular hypertrophy or valvular abnormality (bicuspid aortic valve)
3. Non-cardiac/multifactorial (infiltrative disease such as amyloidosis)

The most common cause of exertional CP in middle-aged adults is CAD. Secondly, many may have undiagnosed structural or functional abnormalities that are congenital or developmental and had not been identified before the exertional symptoms.

Were there other tests that you thought of but decided against? Why?

Given the patient's young age, active and low-risk lifestyle he is an ideal candidate for exercise stress echocardiogram. The test is least invasive, does not require hospitalization and low-risk. Additionally, it provides structural and functional information in additions to potential territories of ischemia as this patient's CP is exertional.

Some centers consider using nuclear cardiac tests first such as myocardial perfusion scans. I would have considered this if the exercise stress test was inconclusive, difficult to obtain images due to body habitus and window/intercostal spaces make visualization difficult or the patient was unable to exercise to threshold. As well, if this patient had known underlying cardiac disease and/or previous MI, then I would consider nuclear imaging for better differentiation.

Section 4: Therapeutic Management

NPs, on the basis of assessment and diagnosis, formulate the most appropriate plan of care for the client and implement evidence-informed therapeutic interventions in partnership with the client to optimize health.

Describe the care plan you developed in partnership with the client.

Although many of the males seen in our clinic are younger than 65, I often don't hesitate to initiate (1) ASA 81mg if there is no contraindication (i.e. Hx GIB, concomitant antiplatelet therapy, coagulopathy) in certain cases. I generally have the patient initiate this until CAD can be ruled out if we have high suspicion (i.e. high-risk patients). In this case, this patient is of low-cardiac risk and given his active occupation, ASA is not safest. Nitroglycerin SL PRN for CP while awaiting testing. Instruct patient to call 911 if continued CP after 3 sprays and incomplete resolution of CP. This patient did not have a baseline BP home reading and it was not clear if elevated BP was associated with exertional CP. His BP was slightly elevated during exercise stress testing, therefore we opted for him to purchase a home BP monitor as this has been clinically proven to be more accurate than 24hr BP monitors. We did not order Holter (telemetry) monitor as he did not have any symptoms of arrhythmia, nor on ECG or echocardiogram. All testing came back normal and no treatment was recommended outside of discussion of stress

management modalities. We suggested to his family doctor to consider respiratory causes, such as environmental asthma given symptoms of CP and dyspnea developed during stress exercise echocardiogram.

What features led you to choose the treatment that you did?

Patient is young and low-risk.

What were the client's expectations for treatment?

As discussed, the goal of further examination is to determine if there is a cardiac reason for his exertional CP. Additionally, we discussed that even if the tests come back negative this provides further insight for his family MD to determine next steps in evaluating his CP. This opportunity to evaluate his CP symptoms also allows him to have a full cardiac assessment and we could reduce his future risks if we identified any modifiable factors during this consult.

What sources of evidence informed your treatment plan?

Canadian Cardiovascular Society Guidelines
SPRINT trial
ISCHEMIA Trial
Pocket Medicine: 6th Ed.
CardioMedik guide (by David Laflamme)

What did you decide was appropriate for follow up?

We will follow-up after stress exercise echocardiogram is completed in the next 1-2 weeks.
Patient is instructed to call 911 if nitroglycerin x3 PRN, 5 minutes apart does not relieve his discomfort, or if his CP is worse than described today.

After testing was found to be normal, we instructed him to follow-up with his family doctor to consider other causes of his symptoms. We also informed him that he may return to us if he and his family doctor determine further cardiac consultation is required.

Section 5: Collaboration, Consultation and Referral

NPs identify when collaboration, consultation and referral are necessary for safe, competent and comprehensive client care.

How did you decide whether or not to collaborate, consult or refer to a member of the health care team?

I am new to my role. I consult with my Cardiologist colleagues to review our cases to ensure that nothing is missed, and they also offer cardiac teaching. Additionally, at times I require MD collaboration for nuclear medicine cardiac testing.

What was the outcome of the collaboration/consultation/referral (if applicable)?

NA

Final thoughts

Looking back on this client case, is there anything that you would have done differently?

No, I would not have done anything differently.

Is there anything that you would like to add that hasn't been covered about this case example?

No, I have nothing additional to add.

Click to Confirm Completion

 I confirm I have completed my NP Case Example