

## Case Report

# Clinical Decision-Making: Premature Diagnostic Closure on Gallbladder Polyps Presenting as Somatic Pain

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## Abstract

**Objective:** Premature diagnostic closure is a type of cognitive error in which the clinician is unsuccessful to consider reasonable other possibilities after an initial diagnosis is concluded. This leads to a delay in the precise differential diagnosis or faulty clinical decision-making process. This case report aims to outline gallbladder polyp clinical features that closely represent acute shoulder pain pathology.

**Case description:** A 58 years-old female patient was referred to a physiotherapy clinic and presented pain between shoulder blades spreading right shoulder joint and along the costal margin. Also, other symptoms such as nausea and vomiting were complained often followed by consuming meals. Objective evaluations and radiological findings suggested right subacromial impingement syndrome.

**Results:** A trial of conservative care for subacromial impingement syndrome including pain relief, joint manipulations, and home exercises regimen was carried out for 6 weeks. However, the prognosis was poor, thus a literature search was carried out to find other symptoms generator in this case. As a result, a follow-up abdominal ultrasound scan revealed a few gallbladder polyps. On this basis, prophylactic laparoscopy cholecystectomy was performed and complete resolution of symptoms confirmed on the diagnosis of gallbladder polyps.

**Conclusion:** The precise differential diagnosis of clinical presentation between somatic and visceral aetiologies represents a challenge for clinicians because the merging mechanisms that cause symptoms can be virtually indistinguishable between somatic and visceral lesions. In this case, objective and radiological findings masked the most likely primary symptoms generator. However, this delay of differential diagnosis might have happened if the effective systematic clinical history-taking approach was performed. This case provides the clue to clinicians, who focus on the musculoskeletal disorders that they need to be aware of visceral aetiologies in the presence of acute somatic pain presentations.

**Keywords:** Acute shoulder pain; Differential diagnosis; Gallbladder polyps; Medical history-taking; Premature diagnostic closure

## Background

The growths that protrude from the lining of the interior wall of gallbladder are called gallbladder polyps. These polyps possibly lead to gallbladder cancer; however, it is a rather uncommon disease, but gallbladder polyps are common. Even though only a few polyps can end up with incurable stage of cancer [1]. This creates gallbladder polyp is an essential clinical condition. Therefore, every attempt needs to find the earlier stage of gallbladder polyps, which are likely to be surgically removed [2]. The prevalence of gallbladder polyps is 4.3% to 6.9% [3]. Polypoid gallbladder diseases consist of various pathological types. The non-modifiable risk factors are ethnicity, advancing age, female gender and genetics whereas the modifiable risk factors are obesity, rapid weight loss and physically inactive lifestyle [4]. The

presenting symptoms of gallbladder polyps are nonspecific, vague and in many cases asymptomatic [5]. The common acute symptoms of gallbladder diseases are right upper quadrant, between shoulder blades and right shoulder pain; also associated with other symptoms such as nausea and vomiting. Gallbladder associated these signs and symptoms are often aggravated after consuming meals. Shoulder pain is the third most common complaint of musculoskeletal disorders in primary care clinical settings, a systematic review reported one month prevalence of shoulder pain 18.6% to 31%, 4.7% to 46.7% for one year prevalence and 6.7% to 66.7% for lifetime prevalence; the highest incidence in women age 45 to 64 years [6].

Clinicians ought to be proficient in synthesizing knowledge to effective clinical decision making. It is a contextual, continuous and evolving process of data gathering, interpreting and evaluating in order to opt for an evidence-based treatment approach [7]. Also, these skills are characteristic of advanced practitioners and help to deliver the provision of quality care. The clinical history taking contains a wide-ranging and sequential report of the patient's disease with sufficient information regarding possible aetiologies of the patient's primary complaints. The clinical history taking is undoubtedly the most essential component to have precise differential diagnosis and it helps to reveal underlying debilitating diseases. Moreover, the comprehensive clinical history taking not only points us towards a diagnosis but it gives us a better understanding of the patient as a person and not just as disease outcomes [8]. Regardless of great advances in

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medical clinical decision making, the premature diagnostic closure based on pattern recognition may delay the potential prognostic clinical outcomes on patients. This case describes a visceral pathology representing the clinical features similar to musculoskeletal disorders, in which case SOCRATES systematic effective medical history taking can potentially help to rule in the visceral aetiologies relevant to the primary symptoms' generator. It leads to make precise differential diagnosis, subsequently successful prognosis and avoids premature diagnostic closure in a clinical setting [9].

## Case Presentation

A case report demonstrated a 58 years old female, who had a history of dyslipidemia and hypertension, which were under controlled by regular follow up in medical clinic and on medications Atorvastatin and Losartan respectively. During a follow up clinical visit, she presented new complaints such as pain in the right shoulder, between the shoulder blades and pain spreading along the right costal margin. Also, other symptoms such as nausea and vomiting often followed after having meals. She was more concerned about general weakening of her physical and mental capabilities. The patient's past medical history led to an increased index suspicion of ischemic cardiac diseases; thus, she was referred to the cardiology clinic. During the cardiac clinical visit, 2D Echo and exercise ECG were arranged; however, both investigations were normal, therefore she was referred back to the medical clinic, where complains were assumed as musculoskeletal causes, hence right shoulder joint X-ray was ordered. It revealed age related moderate degenerative changes on her right shoulder (Figure 1). On this basis, her pain was managed with prescribing analgesics (Voltarin) for 6 weeks and referred to the physiotherapy clinic. In the physiotherapy clinic, an initial systematic approach of physical examination was carried out. The right shoulder physical examination was followed by a systemic approach. It includes Look, Feel, Move and special tests for specific pathology [10]. During the initial assessment, patient pointed a VAS of 7/10 and DASH score 70.8.



Figure 1: X-ray of the right shoulder.

## Outcomes

Based on the right shoulder joint physical examination findings and radiological image results, a trial of conservative treatment regimen was initiated to find the possible symptomatic resolution for

subacromial impingement syndrome. There are various therapeutic interventions for shoulder impingement as it is determined by individual patient subjective evaluations and the objective findings. However, it is important to have the results of long run pain free and effective functional activities thus this patient received an individualized physiotherapy program [11].

After each treatment session, the patient reported right shoulder pain relief that lasted for few hours. At the end of the 6 weeks conservative therapeutic trial, the patient's prognosis was significantly poor (re-assessment VAS and DASH score was of 6/10 and 63.3 respectively) only intermittent relief of symptoms following each treatment session and patient felt that the primary pain was worse mainly after having meals. Moreover, this patient was on antacids medication (Omeprazole) long time. Thus, the patient primary pain complains were assumed index suspicion of Gastroesophageal Reflux Disease (GERD) and it was triggered by taking oral NSADS for the pain. A literature search was carried out to further explore this case. Number of studies reported that GERD with associated characteristic pain can radiate from the chest posteriorly to the upper back or subscapular and inter scapular regions between vertebrae T10 - L2 [12]. Based on the research articles and the poor symptomatic resolution, a visceral aetiology was reconsidered and patient's prognosis was discussed with medical clinic's physician, subsequently she was referred to surgical clinic, where endoscopy investigation and abdominal ultrasound scan were ordered. However, the endoscopy investigation revealed no significant pathology related to GERD, but Follow-up her abdominal ultrasound scan report revealed the slightly enlarged gallbladder with a few polyps (Figure 2). Prophylactic laparoscopy was performed to remove the gallbladder subsequently a complete symptomatic recovery from the surgical procedure.



Figure 2: Ultrasound scan of gallbladder.

## Investigation

Based on the right shoulder joint physical examination and inferior portion of lateral acromion process arthritis changes on radiological image findings concluded this patient condition as subacromial impingement syndrome. The best epidemiological screening method to accurately determine point prevalence of gallstone disease is ultrasonography. However, an incidental finding is often uncovered during abdominal ultrasound being performed for another reason [13]. In this case, there were two gallbladder polyps identified each

polyp size was less than 10 mm in diameter (0.3 cm × 0.2 cm), however this patient age is over 50 years, thus she had undergone prophylactic laparoscopy cholecystectomy surgery. Because, in a recent clinical study suggested that all patients with gallbladder polyps who have symptomatic and/or polyp size greater than 10 mm in diameter or age over 50 years have high risk of developing malignancy, therefore they should undergo surgical removal of gallbladder [14].

## Discussion

The pain from somatic and visceral origin is challenging for clinicians to differentiate, because during the initial evaluation the clinical presentation of both somatic and visceral disease it often overlaps on the list of potential causes. In this unique case, a systematic approach of physical examination was performed however, reproducing symptoms of a mechanical nature while excluding pain of visceral origin was difficult. The trial of conservative therapeutic approach was initiated based on a most likely scenario supported by objectives and radiological findings. Furthermore, symptomatic positive prognosis immediately after each treatment encouraged the diagnosis of SAIS. However, long term prognosis following prophylactic laparoscopy cholecystectomy of the gallbladder suggested that the most likely cause of symptoms was the presence of the gallbladder polyps. The physiotherapy interventions prescription in regard to SAIS was based on scientific evidence presented in the current literature, however the prognostic value was low because the differential diagnosis was inaccurate in this patient's disease. Therefore, prior to the therapeutic interventions ruling out underlying other cardinal system causative factors or visceral pathology is that it essential to ensure the precise clinical decision making and successful prognosis related to musculoskeletal pain.

Medical history taking can be defined as a consistent and organized approach to collect medical information from a patient to support a clinician's assessment, diagnosis and management in related to the patient's illness. Efficient clinical history taking is the most important feature in the context of healthcare provision because it plays importance to identify not only underlying patient's biomedical issues but also consider biopsychosocial issues of the patient that include their lifestyle and demographic history how they are involved upon their ongoing health condition [15]. In clinical practice, the signs and symptoms with which patients present to clinicians allows the healthcare providers to consider a range of conditions from which a patient might be suffering and to make a considered opinion of what the patient's diagnosis actually is. This approach is called differential diagnosis. In order to make precise differential diagnosis by addressing specific medical issues the clinicians need to focus on effective and efficient clinical history taking. This helps to formulate the most appropriate therapeutic interventions and positive clinical outcomes on the patients [16].

Stimulating a comprehensive patient history concluded by open-ended questions and listen actively. It offers crucial clues to make accuracy of differential diagnosis. An aphorism in medicine credited to William Osler is: "Just listen to your patient, who is telling you the diagnosis" [17]. In a classic study researchers evaluated the relative importance of the medical history, the physical exam, and investigation to have a differential diagnosis, this study resulted precise diagnosis was performed in 66 cases out of the 80 patients by only the efficient clinical history taking [18]. The clinical adage is that about two-thirds of diagnosis can be made on the basis of the effective medical history taking alone has retained its validity despite the

technological advances of the modern hospital. This can help to make potential clinical hypotheses is that it provides more productive, time efficient benefits to the healthcare systems and also avoid unnecessary expensive clinical investigations [8].

This case study highlights the importance of medical history taking to make effective clinical reasoning following the SOCRATES method, which possibly covers the other cardinal symptoms that may cause the pain look like somatic pain pattern [19]. The pattern recognition clinical evaluation may lead to premature diagnostic closure and consequently delay the triage. Looking back at the case this patient signs and symptoms similar to shoulder joint pathology and it might have been assumed root causes, however, the fact that she had gastrointestinal cardinal system involvement to the signs and symptoms. It would have been identified a thorough performing effective clinical history taking because she revealed pain had been aggravated by consuming meals. In the SOCRATES approach, A stands for associated with other cardinal system involvement relevant to the primary complaints.

## Conclusion

The precise differential diagnosis of somatic versus visceral dysfunction represents a challenge for clinicians, because the merging mechanisms, which generate signs and symptoms that can be virtually indistinguishable between somatic and visceral aetiologies. However, health care providers need to ensure timely referral of patients to the appropriate health specialists in order to provide high quality healthcare.

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