

Margaret: a tragic case of spinal Red Flags and Red Herrings

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Abstract

Objective This case illustrates how easily patient misattribution can influence the clinical reasoning process and it alerts physiotherapists to safeguard from the influences of *Red Herrings*.

Design It is the second in a series of case studies considering patients with serious spinal pathology.

Setting This paper considers the case of a 49year old lady who was referred to a Spinal Assessment Clinic in a district general hospital. The clinic was established specifically to deal with more complex spinal patients, identifying those at risk of chronicity, surgical cases or those with more complex pathology. Unfortunately this case was subsequently diagnostically triaged as serious spinal pathology.

Conclusion As misattribution of symptoms by the patient is common, it is essential that the clinician considers a thorough subjective and objective assessment. When drawing inferences from the findings it is vital to stand back and consider if the attributed cause and effect is an inherent likelihood and consider whether there may be important information missing.

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Keywords: Serious pathology; Spine; Red Flags; Misattribution

Introduction

A previous paper [1] highlights the difficulty faced by therapists in detecting serious spinal pathology in the early stages. The following case also serves to illustrate this problem, especially when the clinical presentation is complicated by misattribution of symptoms. In the late stage of this case the serious pathology emerged clearly but unfortunately progressed very rapidly, Margaret first attended for physiotherapy in September and had died by the end of January. It is very likely that Margaret would have died even with earlier identification of her cancer as it progressed so rapidly, however earlier identification could have decreased her level of suffering and discomfort.

The patient

Prior to serious pathology being diagnosed, at her first attendance at physiotherapy, Margaret had the following symptoms, which appear on the Clinical Standards Advisory

Group [2] list of Red Flags:

- Violent trauma (road traffic accident);
- Constant progressive non-mechanical pain;
- Thoracic pain;
- Past medical history of carcinoma (family history of breast cancer, mother and sister);
- Weight loss;
- Persistent severe restriction of lumbar flexion.

In addition she had also developed two breast lumps, which she did not report to the physiotherapist.

When faced with this list of symptoms most therapists would agree that this appears as a very clear-cut case of a patient with serious pathology. However it is important to consider how the symptoms developed over time and also to consider how the clinical reasoning process was strongly influenced by the initial presentation of the case. To illustrate this two scenarios are presented:

1. A patient with no significant past medical history or spinal problems attends for physiotherapy following a road traffic accident with thoracic and rib pain.
2. A patient with a lump in the left breast and a family history of breast cancer (mother and sister) attends for physiotherapy with thoracic and rib pain.

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The physiotherapists interpretation and subsequent clinical reasoning in response to each of these two scenarios is likely to be quite different. Both scenarios are aspects of Margaret's case, which is used to illustrate how misattribution of symptoms influences patients' behaviour and subsequent medical care.

History

On 25 September a referral for Margaret was received in the Physiotherapy Department. Margaret was a 49-year-old office worker, who 5 weeks earlier had been involved in a road traffic accident (23 August), where she had been the driver in a stationary vehicle and a motorcyclist had crashed into the drivers door. Margaret described being in shock for 2 days but then noticed right sided rib pain, she attended Accident & Emergency Department the day after first noticing the rib pain and was prescribed rest, analgesics and 1 week off work. The following week (2 weeks post-road traffic accident) she noticed a constant dull ache in the mid-thoracic spine, with associated morning stiffness. She returned to a different Accident & Emergency Department on 25 September, at this visit she had urine tests, which proved negative, received an anti-inflammatory injection into the buttock, and was prescribed dihydrocodeine and diclofenac. On 27 September Margaret attended for her first physiotherapy appointment. By this time her pain had generally become a little easier, but she still reported a dull ache in the mid-thoracic region. She was much worse first thing in the morning and found that sleeping upright in a chair helped. Margaret reported that litigation concerning the accident was ongoing. No previous back problems were reported there was no medical history of note and she did not smoke or drink alcohol.

Patient assessment and management

At the first physiotherapy appointment Margaret clearly identified pain in the mid-thoracic region with radiating pain around the right chest wall into the ribs. She demonstrated poor sitting posture, but had a full range of lumbar spine movements; all thoracic spinal movements were restricted to 3/4 range. All neurological testing was consistently negative, however palpation revealed tenderness centrally and unilaterally to the right over the fifth to ninth thoracic vertebrae. Following a subjective and objective examination the physiotherapist classified Margaret's problem using the Clinical Standards Advisory Group diagnostic triage as simple (thoracic) back pain and embarked on a course of rehabilitation.

Clinical Standards Advisory Group [2] diagnostic triage:

- Simple backache (95% of patients);
- Nerve root pain (<5% of patients);
- Possible serious spinal pathology (<1% of patients).

Rehabilitation consisted of a home exercise program, which included daily brisk walking and core stability exercises, advice on the use of heat and posture correction, a review appointment was given for 2 weeks later on 10 October. At this appointment Margaret still described sleeping in a chair and continued to complain of the mid-thoracic discomfort, gentle manual therapy was applied locally to the thoracic spine. Six days later, 16 October, Margaret had shown some improvement and was now sleeping in bed, post-treatment soreness had been present for 3 days following the previous appointment. By the next appointment however, Margaret had taken to sleeping on the sofa and described increased thoracic pain. Temporary relief was consistently achieved following each of the treatment sessions however the overall clinical presentation was one of deterioration, this continued until 29 November when a second opinion was sought from another senior physiotherapist.

At that consultation Margaret, for the first time, reported finding a lump in the left breast, this she had already reported to her GP, and was waiting for further investigation by the surgical team at an appointment on 4 December. By this stage Margaret was not eating due to the pain, this was attributed to her medication, the patient described feeling at the end of her tether and stated that she wanted:

To go to sleep and not have to wake up and feel the pain.

The specialist spinal physiotherapist was contacted and an urgent referral to the spinal assessment clinic followed.

On the 4 December appointment at the surgical unit the initial entry in the medical notes is as follows:

Road traffic accident 3 months and then noticed lump 1 week after.

It was also noted that a second lump had appeared the week before in November. An isotope bone scan revealed widespread metastatic disease and interestingly on the right ninth rib posteriorly there was an area highly suggestive of an expansive rapidly growing destructive lesion. During the remainder of December and January, Margaret was managed by a specialist oncology team and died on 30 January.

Discussion

It is easy to understand the initial clinical reasoning of the physiotherapist. Margaret was 49 years old, not an age identified by the Clinical Standards Advisory Group guidelines as being at risk from serious pathology (<20 or >55). Margaret attributed symptoms to her road traffic accident and indeed the site of symptoms was consistent with mechanical injury, where Margaret was in the driver's seat and the driver's door was the point of impact of the motorcyclist. This highlights the importance of vigilance and an awareness that breast cancer is frequently described as the most common cancer in females in western countries [3]. According to Wiesel et al. [4], patients with a history of breast

cancer have an 85% chance of developing bony metastases before death. They also suggest that one of the earliest sites for these metastases is the spine, in particular the thoracic spine, this is also confirmed by the Clinical Standards Advisory Group guidelines [2]. With particular reference to this case it is also interesting to note that one of the important risk factors that has been identified is family history [5,6].

It is very interesting to consider why Margaret did not mention her breast lump to the physiotherapist earlier, a number of alternative explanations exist. The breast lump was on the left but the impact from the road traffic accident and the pain was on the right. Was there a perception that the breast lump was related to the accident or was there an element of fear/denial owing to her experiences with her mother and sister? Unfortunately in Margaret's case the answer to this question will never be known.

Leventhal and Crouch [7] suggest that a patient's behaviour is determined by their own self-diagnosis. This self-diagnosis is determined by mapping the signs and symptoms of the health problem against five attributes, described by Leventhal et al. [8], these are:

1. Disease identity;
2. Timeline (acute versus chronic);
3. Consequences (prognosis/likely outcome);
4. Causes (reasons/blame);
5. Controllability (is intervention necessary?).

In Margaret's case it appears that misattribution occurred in her self-diagnosis concerning disease identity and cause, in that she incorrectly attributed her breast cancer symptoms to her road traffic accident, misattribution of this type is common [9].

According to Jones [10] clinical reasoning refers to the thought processes used in patient diagnosis and management. He goes on to suggest that this reasoning is only as good as the information on which it is based. Scott [11] states that three types of error can occur in clinical reasoning:

1. Faulty perception or elicitation of cues;
2. Incomplete factual knowledge;
3. Misapplication of known facts to a specific problem.

In Margaret's case there appears to have been an error in perception, although there is one set of symptoms there are two potential causal factors that coexist, the breast cancer and the road traffic accident, the physiotherapist was only aware of one of these factors, the road traffic accident. As deductive reasoning involves logical inference [10], the physiotherapists clinical reasoning was appropriate under the circumstances.

Implications for practice

This case illustrates how easily misattribution can influence physiotherapists clinical reasoning processes. This poses the question "How can physiotherapists safeguard

themselves against being influenced by *Red Herrings*?" It is important in clinical history taking to probe deeply with questioning and listen carefully to the response. When drawing inferences it is vital at this stage to stand back and consider if the attributed cause and effect is an inherent likelihood and to consider whether there may be any information missing. This process should continue throughout the whole patient management episode. In view of the current high levels of cancer in Western Society and predicted increases in its incidence, including those with a genetic component, it would be prudent for physiotherapists not only to routinely investigate the patients history of cancer but any previous family history of cancer as well.

It is also interesting to consider Margaret's early and persistent report of an inability to lie supine. The Clinical Standards Advisory Group [2] guidelines do not list this clinical feature as a Red Flag. However, the more recent New Zealand Low Back Pain [12] guidelines list of Red Flags includes patients with spinal problems whose pain gets worse when they lie down. The clinical experience of the lead author (S.G.) would tend to concur with the opinion of the New Zealand guidelines, in that a patients persistent report of an inability to lie supine should be considered as a Red Flag.

The final questions to consider in this case are why following the road traffic accident the previously asymptomatic cancer became painful and would it have progressed so rapidly without the "trigger" of the accident. Unfortunately, however these questions are beyond the scope of this paper.

Key messages

- Misattribution of symptoms by the patient is common.
- In clinical history taking physiotherapists need to consider the possibility of alternative causes of the presenting condition.
- Physiotherapists need to consider family history of cancer.
- Persistent inability to lie supine should be considered as a Red Flag.

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