Skin and Breast Disease in the Differential Diagnosis of Chest Pain

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Pain is not a symptom commonly associated with skin disease. This is especially so when considering the known skin problems that have a presenting symptom of chest pain that could potentially be confused with chest pain from other causes.

PAINFUL SKIN CONDITIONS

Several extremely painful and tender skin conditions present with dramatic clinical signs. Inflammatory disorders such as pyoderma gangrenosum, skin malignancies, both primary and secondary, acute bacterial infections such as erysipelas or cellulitis, and multiple other infections are commonly extremely painful and tender. As these conditions manifest with obvious skin signs such as swelling, erythema, localized tenderness, fever, lymphangitis, and lymphadenopathy, there is little chance of misdiagnosis of symptoms as caused by anything other than a cutaneous pathology.

Several skin tumors can be painful or tender. These include blue rubber bleb nevus, eccrine spiradenoma, neuromas, neurilemmomas, glomus tumors, angiolipomas, leiomyomas, dermatofibromas, squamous cell carcinomas and other skin malignancies especially when perineural infiltration is present, endometriomas, and granular cell tumors. Once again in almost all cases of pain related to a skin tumor a lesion can be readily identified, often by the patient. For a painful skin condition to be

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misdiagnosed as cardiac, pulmonary, or other forms of chest pain, the pain must arise in the absence of readily identifiable skin disease.

HERPES ZOSTER

The classic condition to cause significant pain without obvious skin changes is herpes zoster. Although herpes zoster affects 20% to 30% of people in their lifetime, up to 50% of those more than 80 years old will be affected.[1] Herpes zoster is the reactivation of varicella zoster (chicken pox) virus that has lain dormant in the spinal dorsal root ganglion since initial infection. This produces the well-known, dermatomally distributed eruption commonly known as shingles. Most often unilateral and confined to a single dermatome, herpes zoster can involve multiple dermatomes and be bilateral. In severe cases, scarring and depigmentation may follow the healing of the acute lesions. There is often significant associated pain preceding, accompanying, and following resolution of the skin eruption. Pain persisting more than a month after the typical skin eruption is termed postherpetic neuralgia.

The pain is variable in intensity but can be severe. It may be localized or more diffuse. The onset of pain is usually around 4 days before any skin lesions appear.[2] This prodromal pain has been labeled as "preherpetic neuralgia."[3] There may be associated fever, malaise, and often tenderness or hyperesthesia in the affected area. Obviously in the prodromal phase before the onset of the skin lesions, the source of this pain can be obscure and erroneously attributed to other causes. For example, involvement of abdominal dermatomes can lead to the diagnosis of intraabdominal pathology such as biliary colic,[4] duodenal ulcer, appendicitis, or renal colic. A rare presentation is where there is no skin eruption following the prodromal pain. This is termed "zoster sine eruption" or "zoster sine herpete." The diagnosis may be supported by demonstrating an increase in IgM and eventually IgG varicella antibody titers.[5,6]

Of particular interest are reports of 6 zoster patients in whom pain preceded any skin eruption for between 7 and more than 100 days. The distribution of the pain did not always occur in the same dermatomes where the rash eventually developed.[3] Clearly it would be extremely difficult to diagnose the cause of such a pain before the onset of skin signs. Pain from such an atypical presentation of zoster would be even more likely to be attributed to other causes.

During this phase of pain without skin lesions, there is the likelihood that diagnoses other than herpes zoster will be considered.[7] Of especial pertinence to chest pain is the fact that zoster-related pain is more likely in older patients and will more often be severe. As older patients are also more at risk of chest pain from cardiac and pulmonary causes, the increasing incidence of zoster with increasing age also adds to the likelihood of diagnostic confusion.

Thoracic dermatomes are commonly affected. These features enhance the risk of confusion with cardiac pain[8,9] or pleurisy. Herpes zoster can be complicated by pleuropericarditis and even complete heart block.[10] Temporary electrocardiographic abnormalities can be seen.[11]

Diagnosing herpes zoster during this prodromal phase is clearly difficult. Clues to the diagnosis include a history of varicella or herpes zoster, the presence of localized skin tenderness or hyperesthesia in the painful area, and the localization of pain to a dermatome. Obviously all efforts would need to be made to exclude other serious or indeed life-threatening causes of chest pain. Often the diagnosis is only made with the onset of the typical skin lesions of grouped vesicles and pustules on an erythematous base in a dermatomal distribution. Then the diagnosis can usually be made on clinical grounds alone. Swabs from a blister base reveal varicella zoster virus