



Gas as a Cause of Spinal Pains: A Possible New Syndrome

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Dear Editor-in-Chief

Spinal pains like low back pain and neck pain are extremely common problems throughout the world (1, 2). The causes of some types of pains are well explained but in many other cases, there is no apparent cause for the pain (3). Mechanical factors, such as lifting and carrying, probably do not have a major pathogenic role. Furthermore, the mechanism of action of many treatments is unclear (4). In this article, we present one possible new syndrome, which may explain some types of pain in the axial line of the body. In historical medical manuscripts, Rhazes or Razi (865-925 AD), the famous Iranian physician, described gas in the spine as a possible cause of low back pain. He prescribed sitting in a hot hole as a method of treatment (5, 6). Another traditional Persian physician, Avicenna (980-1037 AD) postulated that pain may be caused by stretching and compression of tissues due to entrapped gas. Under this hypothesis, the site of pain could vary in association with movement of gas bubbles (6).

In the contemporary era, the presence of gas in the spine was initially described in 1937 by Mag-

nusson (7) and this observation has since been corroborated in a number of studies. Spinal pains like low back pain and neck pain are extremely common problems throughout the world (8-10), from the cervical spine to the cauda equina (11, 12). Intra-osseous gas has also been observed in sacral insufficiency fracture (13).

Gas within the spine has been described as a rare cause of pain (14, 15). It is however feasible that gas may be a more common cause of somatic and radicular pains related to the spine on the basis of:

- The numerous reports of gas within the spine in the literature (9-18).
- The wide variations of the gas locations in the spine (9-18).
- The possibility of bubbles of gas within the spine, undetected by conventional radiology (19, 20).

Also, there are several hypotheses related to this area:

- The gas bubbles can move in liquids like Cerebro Spinal Fluid (CSF). For example, when the patient placed in the lying position for taking the radiological images, the bubbles move from the painful site to the normal parts that may not include in the image.
- The gas can reabsorb by the diffusion phenomenon because of concentration differences between tissues. So, a huge bubble of gas may reabsorb until the patient visits by the radiology technician or radiologist.
- Contrary to other pathological causes of pain, form and shape of the gas can change extremely. A large blob can be widespread between tissue layers similar to butter on the toast. So, this thin layer may not see in some radiological images.

To our knowledge, there has been no previous article with direct suggestion of the gas as a more prevalent cause of spine related pain. In our view, further research on gas related pain syndromes of the spine is indicated with a focus on epidemiology, physiopathological mechanisms, clinical/radiological features and treatment strategies.

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