

A BRIEF HISTORY OF LOW BACK PAIN: YESTERDAY-TODAY-TOMMOROW

Throughout history, lower back pain (LBP) has been one the most common, frustrating, and diagnostically elusive medical maladies of human kind. It frequently reminds us of its presence it sits in the top 10 list of diagnoses accounting for visits to a primary care office each year (1). Seventy percent to 85% of patients who seek medical care are affected in their lifetime, costing society billions of dollars annually (2, 3). LBP is challenging for both the patient and the health care provider. On a historical timeline of LBP, we find the earliest surviving documentation originating through Egyptian, Greek, Roman and Arabic texts. One of the most well known texts that describes acute lower back strain, the Edwin Smith papyrus dates back to 1500 BC (4). The following are experts from this ancient SOAP note.

Examination

If thou examines a man having a sprain of his vertebrae of his spinal column, though shouldst say to him; extend now your legs and contract them both. He contracts them both immediately because of the pain he causes in the vertebrae of the spinal column in which he suffers.

Diagnosis

Thou shouldst say to him; "O having a sprain in the vertebrae of his spinal column an ailment of which I shall treat".

Treatment

Though shouldst place him prostate on his back.

How far have we come in 3000 years in accuracy of our diagnosis and treatment of this prevalent ailment? As we travel forward through history, many of the practices of western medicine can be traced to the *Corpus Hippocraticus* (circa 400 BC), the collated writings of the Greek Library at Cos and Cnidus. It was there that Galen of Pergamon and his disciples dominated the writings for the next 1200 years (4) terms such as sciatica pain and LBP were first mentioned by Hippocrates' teachings for most of the early centuries of the first millennium. Arabian influence then permeated into the medical landscape with the writing of *The Canons of Medicine* by Avicenna (981-1037) (6) physicians of the time recommended that surgery could not be performed on the back and most recommendations centered around watchful waiting.

As with many things during medieval times, medical thought, or at least documentation of thought, almost ceased to progress during the Dark Ages, as patient care moved into the hands of the church-state authority. Priests were trained in medicine but care was highly compromised by the religious doctrine. Back pain persisted in folk medicine (4) the Welsh name "shot of the el" and the Germanic "witch's shot" reflect the belief that pain was caused by eternal and spiritual influences (7).

It was only during the twentieth century that physicians seemed to start questioning the certainty of their specific diagnostic acumen of LBP. At the beginning of the century, the causes of LBP was simplified and blamed on their neuritis/neuralgia or muscle rheumatism (4, 6). In the 1920s and 1930s, theories grew and coexisted. Neurasthenia, hysteria, nervousness, neurosis, psychogenesis, and psychosomatic origin were terms to describe psychogenic causes for LBP(4). During the second world war, hysterical sciatica and lumbago occurred more often than during peaceful times (7,8). The use of the descriptive identifying disk disease was not even mentioned in studies as a specific disease entity until the latter half of the twentieth century. Then in the 1940s, the dynasty of the disk paradigm dominated almost all discussion (9, 10). This topic faded as investigation revealed disk disease accounting for only less than 10% to 15% of LBP (4,9,10). As technology advanced, physicians tended to trust the results of their diagnostic instruments more than the physical examination, even despite knowing that bulging or herniated disks and symptom production have a poor correlation (11,12). Later studies describe an 80% uncertainty about the specific cause of LBP, and medical science begun to question, "is there any progress in our understanding?" (13,15). The terminology of mechanical LBP dominates the general accepted etiologic description for the complicated differential diagnosis of LBP because this term encompasses 97% of the possible diagnosis (16).

Despite the 3000 years of advances in medical knowledge, the earliest writings in Egypt similarly describe LBP also in general diagnosis: sprain of vertebrae. Because the human back is complex, with motion and force across tendons, muscles, bones and tissue in multiple directions, one correctly assumes that the differential diagnosis and treatment are equally as complicated. With astronomical costs to society, our treatments have not changed much over the last 3000 years.

Concerning treatment, how would you as health care provider advise our Egyptian patient? How did the ancient healer compare with the evidence-based information tests of today? The odds are that the ancient Egyptian physician was likely 95% accurate in his treatment. Applying today's evidence-based studies reveal that 90-95% of acute LBP dissolve between 6-12 weeks regardless of our intervention (16). It's hoped that the ancient healer did not miss any red flags (age >50 years, fever unrelenting night pain, history of cancer, weight loss, incontinence, saddle anesthesia, progressive motor or sensory deficit, or history of intravenous drug use; all of which may

indicate a serious underlying condition). It seems that the ancient healer's documentation would fall short in the court of modern standards for pertinent positive and negative history. Other observations reveal that modern medicine progressed with our recommendations for treatment regarding bed rest. We no longer recommend bed rest. Bed rest provides no benefit to patients who have acute LBP with or without sciatica. There is strong evidence that advise to stay active other than rest in bed results in less time missed from work, less pain and an improved functional ability (17, 18). For patients with sciatica, there is no difference in outcome between staying active and rest in bed (17, 18). If bed rest is necessary it should last no longer than 2-3 days if possible (18).

The substantial need for care of patients, coupled with our poor understanding of the fundamental basis of LBP in main individuals has led to an ever-expanding array of treatment options, including medications, manual/manipulation therapy, percutaneous interventional spine procedures, and an increasing repertoire of surgical approaches (2-19). Historically a fair share of back pain management has been a series of expensive fads, old contraptions, and the latest gimmicks. The high frequency of LBP mixed with the desperation of many venerable patients has led easy prey for snake oil sales men. Fertile soil for narcotic or opioid abuse as been tilled and overuse has become rampant in the past several decades, further clouding adequate treatment. Many treatments have been discredited but not until they had been provided to scores of patients at high cost, and occasional morbidity (2).

Patients and healthcare providers are still faced with selecting from a hundreds of available interventions. Although all claim to improve LBP, some often lack strong evidence to support their efficacy and safety (16). Acute LBP with or without sciatica is usually self limited and has no serious underlying disease (16). For most patients, reassurance, non-narcotic pain medications, and counseling to stay active are sufficient. Simplicity and common sense seem to guide us for much of the treatment of this disease. For example if educating and informing the patient course of the illness help, why not do it? (21). Or in the other words of the famous scientist Albert Einstein, "everything should be made as simple as possible, but not simpler"(21, 22).

L.N. Gakuu, EBS, MBChB, MMed (Surg), FCS (ECSA), Professor, Department of Orthopaedic Surgery, College of Health Sciences, University of Nairobi, P.O. Box 19676-00202, Nairobi, Kenya. Email: menelik.medical@gmail.com

REFERENCES

1. Bratton, R. Assessment and management of acute low back pain. *Am Fam Physician*. 1999; **60**:2299-308.
2. Haldeman, S. and Dagenais, S. A supermarket approach to the evidence-formed management of chronic low back pain. *Spine J*. 2008; **8**(1):1-7.
3. Deyo, R.A., Weinstein, J.N. Low back pain. *N Engl J Med*. 2001; **344**(5):363-370.
4. Allen, D.B. and Waddell, G. A historical perspective on low back pain and disability. *Acta Orthop Scand*. 1989; **60**(Suppl 234): 1-23.
5. Knoeller, S.M. and Seifried, C. Historical perspective: history of spinal surgery. *Spine*. 2000; **25**:2838-2843.
6. Chedid, K.J. and Chedid, M. The tract of history in the treatment of lumbar degenerative disc disease. *Neurosurg Focus*. 2003; **16**(1): E7.
7. Keele, K.D. Anatomies of pain. Oxford (United Kingdom): Blackwell scientific publications; 1957.
8. Raether, M. Psychogene Ischias. (Uber psychogene. "Ischias-Rheumatismus-und Wirbelsaulenerkrankungen"). Bericht der niederrheinischen Gesellschaft fur Natur-und Heilkunde in Bonn. *Dtsch Med Wochenschr*. 1917; **50**:1576(in German).
9. Mixer, W.J. Rapture of the lumber intervertebral disk. *Ann Surg*. 1937; **106**:777-787.
10. Barr, J.S. Lumbar disk in retrospect and prospect. *Clin Orthop*. 1977; **129**: 4-8.
11. Boden, S.D., Davis, O.D. and Dina, T.S. Abnormal magnetic resonance scans of the lumbar spine in asymptomatic subjects. *J Bone Joint Surg*. 1990; **3**:403-408.
12. Enzmann, D.R. On low back pain. *AJNR Am J Neuroradiol*. 1994; **15**:109-113.
13. Lutz, G., Butzlaff, M., Schultz-Venrath, U., et al. Looking back on back pain: trial and error of diagnosis in the 20th century. *Spine (Phila Pa 1976)*2003; **28**(16):1899-905.
14. Deyo, R.A. Rethinking strategies for acute low back pain. *Acad Emerg Med*. 1994; **11**:38-56.
15. Raspe, H. A database for back (axial skeletal) pain. *Rheum Dis Clin North Am*. 1995; **21**:559-579.
16. Kincade, S. Evaluation and treatment of acute low back pain. *Am Fam Physician*. 2007;**75**(8):1181-1188.
17. Hagen, K.B., Hilde, G., Jamtvedt, G. et al. Bed rest for acute low back pain and sciatica . *Cochrane Database Syst Rev*. 2004;(4):CD001254

18. Hilde, G., Hagen, K.B., Jamtvedt, G., *et al.* Advice to stay active as a single treatment for low back pain and sciatica. *Cochrane Database Syst Rev.* 2006;(2)CD003632.
19. Deyo, R.A., Mirza, S.K., Tuner, J.A., *et al.* Vertreating chronic back pain: time to back off? *J Am Board Fam Med.* 2009; **22**(1):62-68.
20. Boden, S.D., Dreyer, S.J., Levy, H.I. Management of low back pain. Current assessment and the formulation of a blueprint for the health care delivery. *Phys Med Rehabil Clin North Am.* 1998; **9**(2):419-433.
21. Eistein A. Readers digest 1977.
22. Duffy, L. Low back pain: an approach to diagnosis and management. *Prim Care.* 2010; **37**:729-741.