A NON-MECHANICAL APPROACH TO JOINT PAIN:

EXAMINING ARTHRITIC CONDITIONS AND PATHOGENIC INVOLVEMENT

BSC OF OSTEOPATHY THESIS PROJECT

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I. Introduction: an Osteopathic approach to joint pain

Osteopathy medicine as expressed by Dr. Andrew Taylor Still is a philosophy based on evaluating the body as a whole; mind, body and spirit. It emphasizes the body's ability to self regulate and heal itself. The structure and function are interrelated and we must look at the sum and all its part to be effective in aiding the body's self regulatory system.

While Doctors of Osteopathy and Manual Osteopaths differ in that Manual Osteopaths for instance are not prescribing drugs, performing surgeries and other diagnostics, it is still important to view the body as a whole and bring into the manual practice a great understanding of areas outside our current scope of practice. In doing so we can provide the best possible care and direction to our patients.

Joint pain, a condition within the scope of practice for manual osteopaths, can sometimes fall outside of our scope when it comes to infectious agents and pathogens. By examining below some of the pathogenic causes of joint pain, I hope to provide the practitioner with greater understanding to the complexity of joint pain. This knowledge can aid the practitioner in asking better questions and taking better patient history. By identifying areas which may require further testing and consideration we can help our patients more effectively.

II. Understanding arthritis

First of all to understand arthritis we have to be aware of the fact that there are several types of arthritis. In class we covered Septic arthritis and rheumatoid arthritis. Chronic inflammatory joint pain / arthritis can originate from many different causes and we can take many different courses in resolving it. Here is a list of some of the leading causes of arthritic conditions.

1) Trauma - Arthritis develops when there is an acute trauma to the joint. This can result in temporary short term inflammation or can develop into a long term chronic osteoarthritis. Early treatment can be beneficial in preventing the later development of a chronic osteoarthritic condition. Manual Osteopathy can be one approach to take in treating these symptoms because it can help the area get better circulation which can be beneficial in reduction of inflammation. [1]
2) Wear and tear - Overuse of a joint can also lead to arthritis and Manual Osteopathy can also be helpful in reducing the stress on a joint by addressing the alignment and also assisting the joint is getting proper circulation. [2]
3) Genetics - Genetic markers like HLA-B27 can lead to conditions such as ankylosing spondylitis. Also joint mobilization, massage, hot and cold compress as well as medications can be helpful in reducing the severity of these conditions. [2]
4) Uric acid - Gout is caused by a build up of urate crystals when you have high levels of uric acid in your blood. Uric acid is produced from breaking down purines therefore avoiding foods with these purines can be helpful in controlling Gout. Foods such as sardines, trout, mussels, scallops, red and organ meat, alcoholic beverages and sugary drinks to name a few. [3]
5) Immune system mediated - Rheumatoid arthritis develops when the body's own immune system attacks the body's own tissues. While genetic background can play a role so too can environmental factors and pathogens. The defining feature of this type of arthritis is that the body is attacking itself even though the attack may be mediated by one of these other factors. [2 / 4 / 5]
6) Infection - Infectious or septic arthritis is mediated by an infectious pathogen such as Staphylococci, Haemophilus influenza, E. coli, Streptococci, Gonococci and various viruses. This type of arthritis is treated with antibiotics in some cases however this is not appropriate for viral causes. Septic arthritis will have symptoms of fever and heat/warmth around the affected joint and the body is directly being attacked by the pathogen. [6]
7) Food induced arthritis - While there is plenty of research indicating certain foods can aggravate or even create arthritic conditions. This type of arthritis may overlap into categories 4, 5 and 6 above due to foods aggravating pathogenic infection as well as inducing certain chemical components in the body as is the case with purines, gluten, lactose and many others. [7 / 8]

The focus today is to examine primarily the immune mediated and infectious forms of arthritis such as those in 5 & 6 above and potentially 4 &7. By better understanding the vast array of pathogens that can affect joints we can begin to investigate solutions. Effective history taking can play as much of a roll in effective joint care as do our manual techniques.

III. Pathogenic agents of arthritis and symptomology

Stated in clinical lab lecture 12; " The predominant causative pathogens in septic arthritis are Staphylococcus aureus and Streptococcus accounting for up to 91% of cases". In clinical Lab lecture 10 she refers to Rheumatoid arthritis as being suggested that it is a response to an infectious agent. There is however, more available in regards to research in these areas and the graphs below uncover multiple causal agents outside of mechanical injury for joint pain, muscle aches and stiffness. Scientific data confirms so much more than we discussed in class and it is time we take into account all this new information and diligently apply it in our practice.

Major considerations need to be made in identifying other avenues of joint pain as they may not all come from mechanical issues resulting from MVA's, falls and other impact injuries. While many clients may complain about a poor sleep causing neck pain it is also important to consider while a sore throat may arise overnight from an infection so too can a stiff neck, joint pain and stiffness. Below are some pathogens to consider if someone is presenting with a sore neck or muscles. While this list is not a complete list I have highlighted a few areas to consider.

For example; pathogens that can cause diarrhea can also cause a stiff neck. [9] I have worked as a remote pathogenicist for over 5 years and in my practice I have often found E-coli and Giardia to present this way even though it is not typically listed as a symptom. According to the above noted article however this makes sense to consider these sorts of illnesses as well. In taking a history with your client be sure to ask if they are presenting with diarrhea, IBS, colitis or any other digestive disorders.

We already know that dysfunctional visceral movement of the gall bladder and liver can lead to neck and shoulder impingement due to the attachment of the Phrenic Nerve. This is another avenue to consider. Pathogens that can affect liver and gall bladder, such as hepatitis and calculi bill or hepatic calculi are also possible causes in our investigation.

Muscle aches/stiffness	**Symptoms**
Rickettsia	Flu Like Symptoms, Fatigue, Muscle and Joint Pain, Hot Sweats, Neck Stiffness [10]
Lymphocytic Choriomeningitis	Headache, Fever, Muscle Ache, Fatigue, Sore Throat, Aversion to Light/Sound [11]
Influenza / Flus	cough, diarrhea, respiratory difficulties, fever, headache, muscle aches, malaise, runny nose, sore throat [12]
Neisseria meningitidis / Meningitidis	Headache, Neck Stiffness, Nausea, Light Aversion, Drowsiness, Generally Feeling Unwell [13]
Cytomegalo Virus (Simian)	Sore Throat, Enlarged Tonsils, Fatigue, Muscle Ache, Loss of Appetite. [14]

Muscle aches/stiffness	Symptoms
Epstein Barr (Simian)	Neck & Shoulder Tension, Fatigue, Headache From The Neck Up, Swollen Glands, Sore Throat [15]
Monkeypox	Spots, Rash, Fatigue, Headache, Muscle Ache, Swollen Glands [16]
Hepatitis (various strains)	Neck & Shoulder Tension, Restless Legs, Reynaulds, Fatigue, Headache (Neck Up), Throat Clearing, Pins/Needles, Numbness [17A/B/C]
Leptospira	High fever, headache, chills, muscle ache, vomiting, Jaundice, red eyes, abdominal pain, diarrhea, rash, kidney damage, meningitis, liver failure, respiratory distress and death. [18]
Carion's disease/Cat scratch Fever/ Rochlimea/ Bartonella	Fever, headache, muscle aches, abdominal pain and severe anemia. Second phase warts where growths of red or purple vascular sores develop and become raw or bleed. [19]
Katayama Fever	Fatigue, fever, muscle aches, malaise, abdominal pain, enlarged liver and spleen, weight loss, diarrhea, rash. [20]
Typhus	Fever, chills, headache, rapid breathing, muscle aches, rash, cough, nausea, vomitting, confusion. [21]
Hantavirus Pumonary Syndrome	Fever, muscle aches, fatigue, dizziness, chills, headache, abdominal pain, diarrhea, vomiting, shortness of breath, coughing. [22]
E.Coli / Gastroenteritis / Campylobacter/ IBS/ Cyclospora Cayetanensis / Salmonella / Clostridium	Constipation or Diarrhea, Bloating and Abdominal Cramps, Nausea, Fatigue, body aches, stiff neck [9]
Syphilis / Treponema	Dental infection. Produces destructive lesions or chancre on any tissue in the body, Fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, fatigue [23]

There is also further research in areas more specific to joint pain and arthritis. I have included a short list of some of the symptoms associated with these pathogens. The lists are not conclusive however they are meant to be a starting point to investigate possible causes that involve more than just Staphylococcus and Streptococcus Bacteria. While joint inflammation is common between all of these by examining the other features you can see some of them may cause jaw pain and dental issues while other can cause urinary issues or a rash. If a patient is presenting with these additional symptoms it may be good to consider lab work and referring them out to a Doctor.

Joint pain and arthritis	Symptoms
Polio Virus	Fatigue, Headache, Sore Throat, Aching or Stiffness in Arms, Legs, Back or Neck, Dizziness. [26]
Clostridium Tetanus	Headache, Jaw Cramping, Trouble Swallowing, Painful Muscle Stiffness, Fever [27]
Mycoplasma	Tenderness, Swelling and Stiffness In Joints, Fatigue, Loss Of Joint Range Of Motion “Arthritis is one of the extrapulmonary manifestations of *Mycoplasma pneumoniae* infection. The number of infected patients who develop arthritis is not known. Viral and bacterial antigens have been suggested to be triggers for arthritis in susceptible individuals.” [29]
Coxsackie B	Coxsackie B1 – Autonomic Nervous System, Paresis of extremities. Usually ganglions of thoracic vertebrae 1-7. Numbness of fingers. Myocardiopathy. Coxsackie B3 – Thoracic Section of the Spine & Thymus Coxsackie B4 – Paresis of arms & legs , colitis, tachycardia, lung problems, liver & pancreas problems, bladder, voice, catarrh, blood in faeces, urine or sperm, ulcers, pylorus paralysis, involuntary urination or defecation, epileptic fits, hyper-hydrosis, thyroid problems. Coxsackie B5 – Lower backache from coccyx to last thoracic vertebrae. Lower respiratory infections and pancreatitis. Coxsackie B6 – Lower backache, aching and restricted movement throughout body [30]
Prevotella	Causes pelvic inflammatory disease, bacterial vaginosis, rheumatoid arthritis, joint and dental issues. [31]
Ross river Fever	Fever, chills, muscle aches, rash, fatigue, aching tendons, swollen lymph, headaches especially behind the eyes, joint pain, stiffness and swelling [32]
Serratia	Peritonitis, septic arthritis and ocular infections [33A /B]

IV. Diagnosis and history taking as it relates to pathogenics

While we are not diagnosing pathogens and other diseases as manual osteopaths we may be the first person our patients have come to for help. It is important to point our patients in the right directions if we suspect they may require a medical examination. Traditional Manual Osteopathy can elicit positive changes in the body however, we must also consider other possible causes especially if these approaches are not proving long term remedy or stabilization. A shift in thinking towards pathogenics, tracking symptoms and monitoring progress may help narrow down other sources of pain, aches, stiffness and arthritic like inflammation. If and when we do suspect something outside of our scope we can refer our patients out.

It is important to become familiar with pathogens that relate to areas of care in which we see a great number of patients with these complaints. If we begin by taking proper history and examining symptoms in all areas we are more likely to be able to guide our patients to get proper care and seek diagnosis where mechanical techniques are providing no relief or only temporary relief.

V. Treating Chronic joint pain and some wholistic considerations

There are many ways to deal with joint pain, medication, rest, soft tissue or osseous mobilization, hot and cold compresses. Ultimately, to be successful with achieving our goals with reducing joint pain and inflammation we need good history taking skills. Becoming familiar with various pathogens and symptoms that accompany different conditions we begin to know what pattern to look for to direct our investigation. While arthritic conditions may all benefit from manual techniques in the short or long term it is important to consider various avenues in our approach to whole body wellness care.

Water intake is important because dehydrated muscles can cramp easily and cause stiffness and tightness. Caffeine and alcohol intake can be problematic if a patient intakes these daily as it may be affecting the electrolytes needed for proper absorption of water. In spite of the best efforts to drink enough fluids this still may leave them depleted. Vertebral discs are filled with water and improper hydration can affect them. Serous membranes between the organs require water to help them slide and glide against each other. When a body lacks water the proper movement of these organs may be affected, they can become sticky and movement in the body is compromised. Not only that but depleted electrolytes can have you running to the bathroom more frequently. Symptoms of dehydration could present as sore stiff muscles, light headedness, muscle cramping and even headaches.

We can also help our patients in discussing nutrition to help minimize pain and improve outcomes. There is much evidence showing a correlation to arthritis and the intake of dairy products. A trial of 2-3 months without dairy can provide some answers on an individual basis as people react differently to foods. If the inflammation is reduced, then permanent elimination of this food can be helpful. Eggs are also known to elicit inflammation in some patients, this may be another food elimination to try. Processed meats, sugar, fried foods and refined grains are also on the list of foods that cause inflammation. Doing some research online can be another great way to become familiar with other foods that could be problematic. [25]

Foods with high L-argenine content are known to deplete the L-lysine amino acid stores. L-lysine seems to play a roll in fighting viruses. If avoiding high L-argenine foods and increasing L-lysine inflammation is reduced, you might consider viral causative agents and encourage them to speak with a Doctor for further examination. [24]

Additionally, some of the more advanced CST brain and immunity techniques can also be used to help influence a positive reaction from the body's own self regulatory system. Visceral manipulation can also help the organ function to improve and self healing processes to occur. Ultimately, however in some cases sending our clients for further testing and getting our patient to consult a physician may be the best help we can give.

VI. Conclusion

Pathogenics as it relates to joint pain is a broad consideration in proper diagnosis. The more information we have about these conditions alongside good history taking skills we may be able to know better when to refer out and manage long term expectations. While antibiotics may be able to address bacterial infection, viral infections may require management on a long term basis if treatment is not available. Manual osteopathy can help manage pain and inflammation. In some cases it is a long term solution and in others it may be a management tool. The more knowledge we have to devise effective treatment plans and make discoveries with patients, the more effective our outcomes will be as a result.

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