

Dietary Approach to Cervical Spondylosis

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Abstract

Day-by day the number of people with the problem of cervical spondylosis - a disorder in which there is abnormal wear and tear on the cartilage and bones of the neck (cervical vertebrae) are accelerating alarmingly. Cervical Spondylosis is often associated with age. It advances with the age. Both sexes are affected equally, but problems begin earlier in males. Work pattern, injury of the neck, genetical background, diet etc. are considered as the causes of CS. Neck stiffness that gets worse over time, numbness or abnormal sensations in the shoulders, arms, or legs, headaches, especially in the back of the head etc. are the symptoms. Apart from physical exercise, medication and yoga diet plays a very important part in decreasing the problem of cervical spondylosis. Proper diet should be consumed to maintain our bones and joints in a healthy condition. Both vegetarian and non-vegetarian diet has their unique roles in maintaining the bone mineral metabolism of the body. Vegetarian diets do offer substantial protection from bone and joint disease provided adequate care is taken to meet the daily calcium, protein and vitamin requirements. Analysis of the available data shows that vegetarian diets prevent the progression of neck and shoulder pain and the demineralization of bones due to the high fibre, vitamin & mineral content and low acid content.

Introduction

The number of people with the complaints of neck and shoulder pain referred to as cervical spondylosis (CS) is mounting significantly day by day. The patients suffering from CS approach doctors for a permanent solution, which is often elusive. People with an age over forty are more prone to the symptoms of CS and it advances with the age. Cervical spondylosis is also identified as cervical osteoarthritis which is referred to the decay of the vertebrae and disks in the neck as we get older, particularly the cervical spine, that is the part of a spine in the neck. The edges of the vertebrae, time after time develop small, rough portions of bone called osteophytes. Cervical spondylosis is caused by chronic wear on the cervical spine. This includes the disks or cushions between the neck vertebrae and the joints between the bones of the cervical spine. There may be abnormal growths or "spurs" on the bones of the spine (vertebrae). These changes can, over time, press down on (compress) one or more of the nerve roots. In advanced cases, the spinal cord becomes involved. This can affect not just the arms, but the legs as well. Every day wear and tear may start these changes. People who are very active at work or in sports may be more likely to have them [1].

Causes of Cervical Spondylosis

Age

Cervical Spondylosis is often associated with age. While only less than 25% of people below 40 years of age experience Cervical Spondylosis, about 60% or more above the age of 40 are affected by it. The major risk factor is aging. Spondylosis progresses with age and often develops at multiple interspaces. With age, osteophytes or bone spurs, form on vertebral bodies. It's the body's way of attempting to increase the surface area and stabilize the hypermobile vertebral joint. Generally not successful in this mission, the bone spurs can become painful as they put pressure on spinal nerves, and in some cases the spinal cord. This pressure often produces weakness, numbness and/or incontinence of either the bowels or the bladder [2]. By age 60, most women and men show signs of cervical spondylosis on x-ray. X-ray findings suggest that 90% of men older than 50 years and 90% of women older than 60 years have evidence of degenerative changes in

the cervical spine. The boundary between normal ageing and disease process is difficult to define [3]. Both sexes are affected equally, but problems begin earlier in males [4].

Neck injury

A neck injury which may have occurred years back can predispose to Spondylosis. Other precipitating factors such as incorrect body posture, trauma, and excessive intake of sour food (according to ayurveda), can trigger spondylitis attacks. If the cartilage wears away completely, it can result in bone rubbing on bone. To make up for the lost cartilage, your body may respond by growing new bone in your facet joints to help support the vertebrae. Over time, this bone overgrowth — called spurs — may narrow the space for the nerves to pass through (stenosis). (<http://orthoinfo.aaos.org>)

Genetics

Although the role of genetics is yet to be confirmed, people with above 50 years of age who experience the condition, are more likely to have a sibling with normal or mild conditions of Cervical Spondylosis. The existence of familial cervical spondylosis is not an unrealistic proposal because other studies have shown that genetics determines the shape of one's spine and that similar spines tend to degenerate in similar ways. Therefore, genetic counselling for a family such as the one reported here may prove to be of great benefit to warn siblings that they are at high risk for cervical spine injury. However rare it might be, familial cervical spondylosis may be a phenomenon that any spine surgeon should suspect in a family with cervical spine abnormalities found in several members [5]. Research has shown that variations of

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Received June 20, 2012; Published July 30, 2012

Citation: Mini KD (2012) Dietary Approach to Cervical Spondylosis. 1: 193. doi: [10.4172/scientificreports.193](http://dx.doi.org/10.4172/scientificreports.193)

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the HLA-B gene, part of a family of genes called Human Leukocyte Antigen (HLA), influences the occurrence of spondylosis [5].

Work activity

Cervical Spondylosis is often found among people who carry heavy loads on their head or shoulders, than those who do not. Another crucial factor is doing work that puts pressure on the neck region, like lifting heavy loads, gymnastics, etc. Other variations of this factor are work environments that require people to work in one position, usually bending, for long periods of time. In short, any activity that puts undue stress on the neck for prolonged periods can cause cervical spondylosis. Some examples are watching the TV seated at an odd position that puts pressure on the neck, travelling for long distances and sleeping while seated, working the phones for long hours, etc. Incorrect sleeping postures, use of very soft sleeping mattresses can also lead to cervical spondylosis.

Herniated discs

The inter-vertebral disks are made-up of two concentric layers, the inner gel like annulus pulposus and the outer fibrous annulus fibrosus. As a result of advancing age, the nucleus loses fluid, volume and resiliency and the entire disc structure becomes more susceptible to trauma and compression. This condition is called as dehydration of the disc. The disc then is highly vulnerable to tears and as these occur, the inner annulus pulposus protrudes through the fibrous layer, producing a bulge in the inter-vertebral disc. This condition is named as herniated disc. This can then cause compression to the spinal cord or the emerging nerve roots and lead to associated problems [6].

Symptoms of cervical spondylosis

Common symptoms include pain in the neck which later radiates to arms or shoulder, weakness on the legs and arms, stiffness in the neck region, numbness of arms, legs or shoulders, loss of balance, headaches (on the back of the head), muscle spasms, loss of control over bladder or bowel movements, and general tiredness and anxiety. Symptoms often develop slowly over time, but they may start or get worse suddenly. The pain may be mild, or it can be deep and so severe that you are unable to move.

You may feel the pain over the shoulder blade or it may spread to the upper arm, forearm, or (rarely) fingers.

The pain may get worse:

- After standing or sitting
- At night
- When you sneeze, cough, or laugh
- When you bend the neck backwards or walk more than a few yards

You may also have weakness in certain muscles. Sometimes, you may not notice it until your doctor examines you. In other cases, you will notice that you have a hard time lifting your arm, squeezing tightly with one of your hands, or other problems [7].

Other common symptoms are:

Neck stiffness that gets worse over time

Numbness or abnormal sensations in the shoulders, arms, or (rarely) legs

Headaches, especially in the back of the head

Role of Diet in Controlling CS

Calcium, phosphorus, Vitamin D and a host of hormonal, dietary and emotional factors play a major role in the integrity of the locomotor system. The delicate balance between these factors permits many things to go wrong in this system-for instance a deficiency in calcium will cause the entire matrix of the bone to become weaker, or an upset in the Calcium: Phosphorus ratio can cause demineralisation of the bone. Proper diet should be consumed to maintain our bones and joints in a healthy condition. Both vegetarian and non-vegetarian diet has their unique roles in maintaining the bone mineral metabolism of the body [8].

Non-vegetarian diet

Meat is a rich source of sulphur which can change the pH of blood. Same impact is observed in the case of fried foods, spicy foods and sour foods. Meat has the heaviest acid load due to the rich sulphur content which increases the acidity of the blood leading to the demineralization of bones. Many surveys have demonstrated that post-menopausal women who are vegetarians have a higher bone mineral content as compared to their non-vegetarian [9] (omnivorous) counterparts.

Furthermore there is a very strong relationship between joint pains like 'frozen shoulder and cervical spondylosis and the kind of food eaten. Fried foods, spicy, oily foods, excessive meats and refined foods like sweets, confectionery, bread and other refined wheat products are the main incriminating factors in joint diseases. The kind of food leads to excess acid load in the blood which the kidneys are unable to cope with. Hence this acid cause's inflammation of all joints, deterioration of intervertebral discs hence the disc compression.

Constipation also initiates the formation of toxins in the gut, which get absorbed into the blood and increase its acidity. This, too, contributes, along with other factors, in the development of CS and bone demineralisation.

Hormones like oestrogen, testosterone, adrenocortical hormones, thyroid and growth hormone also play a very major role in the maintenance of normal body structure and function. A strong link between hormonal activity and the kind of food we eat has been established in several studies.

Vegetarian diet

A vegetarian diet, which is rich in fibre and, in the uncooked form, contains a lot of vitamins and minerals proves very beneficial as it prevents constipation [10], removes toxic matter from the gastrointestinal tract, thereby preventing increased acidity of the blood. The increased amounts of minerals and vitamins in vegetarian foods contribute richly to the smooth functioning of bone metabolism. The acidity (sulphur related) of a non-vegetarian diet initiates and perpetuates bone demineralisation as seen by serial bone mineral density studies done by direct photon absorptiometry. In contrast the vegetarian diet which contains predominantly uncooked food doesn't have this disadvantage. However, fried foods, spicy foods and excessively sour foods-whether vegetarian or non-vegetarian are detrimental to bone, cartilage and joint integrity.

Lacto vegetarianism

It is a common conception that vegetarians lack calcium in their diet and as a result they suffer from bone demineralisation leading to osteoporosis and osteomalacia. This is not true in the case of a lacto-vegetarian because milk and its products are a very rich source of calcium which is easily available to man. However, there are reports and it is our experience that as age advances the digestion of milk becomes more and more difficult owing to decreased gastric acid, enzyme content. The maldigestion of milk not only gives gastrointestinal discomfort but also gives an increased acid burden to the body which leads to joint pains and aggravation of arthritis. Cottage cheese (also known as paneer or clabbered milk) and whey (the water obtained during the preparation of cottage cheese) are excellent calcium sources for a vegetarian and are much less toxic than the nonvegetarian sources of protein. Analysis of the available data shows that vegetarian diets prevent the progression of neck and shoulder pain and the demineralization of bones due to the high fibre, vitamin & mineral content and low acid content

Vegetarian sources of calcium

- A . Milk
- B . Cottage cheese
- C . Almonds
- D . Pulses (though bound to phytate)
- E . Seeds especially Sesame , Sunflower
- F . Cheddar Cheese
- G . Swiss Cheese
- H . Soya beans and their products like TOFU (bean curd)

Factors preventing calcium absorption

- A . Foods containing oxalic acids. e.g. spinach, lotus stem, horsegram
- B . Lack of Vit. D.
- C . Overuse of proteins like meat, fish, poultry, eggs, etc.
- D . Excessive use common salt, alcohol, coffee, tobacco, fat and soft drinks containing phosphorus

Easy dietary tips for CS

Apart from physical exercise, meditation and yoga diet plays a very important part in decreasing the problem of cervical spondylosis. Patient must have four meals a day which includes salad of steamed vegetables, raw vegetables, whole-wheat bread sprouts and milk. Intake of vitamin d, vitamin c, phosphorus, calcium proteins are also useful. Taking lemon juice mixed with salt at least 2-3 times a day. Additional intake of chebulic myrobalan following meals also found very effective. Habitual consumption of 2-3 cloves of garlic in the morning decreases the problem of cervical spondylosis.

Fruits and vegetables- Vitamins C & A content of fruits and vegetables fight against free radicals responsible for inflammation and help to reduce painful swelling around the neck.

Fish, nuts and oil seeds are rich sources of omega 3 fatty acids and vitamin E acting against inflammation.

Apple, garlic, ginger and turmeric are also anti-inflammatory.

Avoid red meat, white potato and coffee as it increase acid load in the body Include fruit juice and veg soup in the routine diet.

Diet rich in monounsaturated fatty acid help to reduce inflammation.

Avoid spicy, hot, salty oily foods [11].

Replace rice with wheat

Add more bitter vegetables like bitter gaud and drum stick in the routine food [12].

Conclusion

Hence it is evident that vegetarian diets do offer substantial protection from bone and joint disease provided adequate care is taken to meet the daily calcium, protein and vitamin requirements. Analysis of the available data shows that vegetarian diets prevent the progression of neck and shoulder pain and the demineralization of bones due to the high fibre, vitamin & mineral content and low acid content. Studies revealed that practising proper dietary pattern in life could do wonders in minimising CS.

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