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CERVICAL PERIARTHRITIS

Diagnosis and Treatment

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The term, periarthritis, by definition means inflammation in the tissues around a joint. Every case of arthritis has an associated periarthritis. The term, cervical periarthritis, we have reserved for those cases in which no arthritis or other abnormal anatomical bone change can be demonstrated. It may be the cause of pain and stiffness in the neck and is usually recognized by the presence of soreness in the supporting ligaments and muscles of the neck.

Many patients with cervical periarthritis complain of numbness and aching in the arms and hands and may have soreness in the shoulder muscles. In the absence of x-ray evidence of disease in the bone, the

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finding of muscle tenderness and painful limited motion in the neck usually identifies the neck as the cause of trouble.

Cervical periarthritis may be associated with functional conditions of the spine, such as scoliosis and relaxed posture. It may be part of the generalized rheumatic involvement of periarticular structures commonly called chronic fibrositis. In some cases, exposure to cold and febrile diseases such as influenza may be important etiologic factors.

The conditions which are considered in the differential diagnosis of cervical periarthritis are osteoarthritis of the cervical spine which is shown on x-ray, and subdeltoid bursitis demonstrable on physical examination or x-ray. Less commonly, one has to differentiate rheumatoid arthritis in the cervical spine, ruptured intervertebral disc,[1] hypertension, scalenus anticus syndrome,[2] cervical rib,[3] and rarely, neoplasm either in the cord or with metastasis in bone.

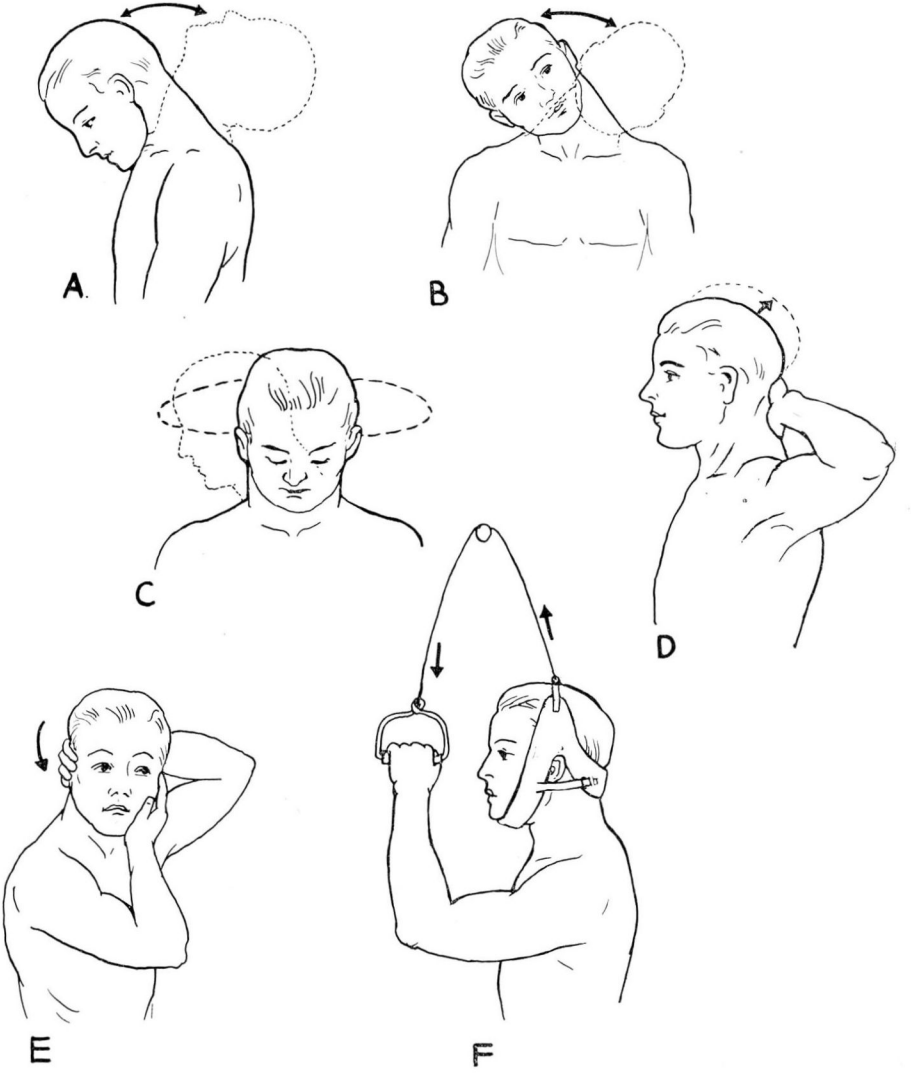
TREATMENT

Treatment of cervical periarthritis is directed to relaxation of the neck muscles, breaking up of fibrositic nodules when present, stretching of the fascial tissues, and increasing the width of the vertebral foramina. In our experience we have found the combined use of local heat (usually short wave diathermy), massage, stretching, and progressive exercises effective in relieving the patient. These treatments are given two or three times a week and may be supplemented with home treatments. The total number depends on the patient's response.

The patient, stripped to the waist, rests comfortably on a padded table. Short wave diathermy is applied to the neck, including the upper fibers of the trapezius muscles, for 20 to 30 minutes. At times it is necessary to lower the intensity of the diathermy since some patients have increased muscle pain when treatment is started. If the patient does not tolerate short wave diathermy, infra-red may be substituted.

Heating is followed by massage in the direction of the venous flow. Massage is light at first, increasing in depth depending upon the acuteness of the symptoms and the patient's tolerance. Vigorous massage is contraindicated as it may increase the symptoms. The massage, however, should be deep enough so that after a varying number of treatments fibrositic nodules may be broken up. It is necessary that the therapist allows the feel of the tissue to guide him in the depth of massage.[4]

The patient then sits in a stable chair. By means of the active exercises illustrated in A, B, and C the range of motion is determined. The therapist then manually stretches the neck and assists the patient in increasing his range of motion. The amount of assistance that can be given will be determined by experience. Care should be taken not to



attempt to progress too rapidly in the exercises at this point. Finally, the patient moves his head against the resistance of the therapist's hand.

Stretching and assistive exercises are repeated with the aid of a head sling such as the Sayre type. The patient raises the buttocks about one inch from the chair, the sling is made taut by means of a windlass and ratchet, and he then allows his weight to fall against the resistance of the sling. This stretching is usually not difficult and most of the weight is carried by the chair and only part by the sling. Assistive exercises are

again repeated. The patient then stands and rises on his toes while the sling is made taut. The weight is thus divided between the heels and the sling when his feet resume the anatomical position. Assistive exercises are repeated. Stretching by means of the sling is repeated two to three times in each position.

Local heat and exercises are essentials of home treatment. The patients should be instructed in the use of a firm bed for sleeping and postural correction. Satisfactory local heat may be obtained at home from an electric heating pad or hot water bottle. The patient should be taught to exercise his neck first actively as illustrated in A, B, and C, and then with the assistance of his own hands attempt to increase range of motion where limitation exists. Finally, he should learn to exercise against resistance as illustrated in D and E. Frequently it is advisable to instruct the patient in the use of a sling for home treatment as in F of the figure.

When the patient is not able to have a full course of treatment by a trained therapist, home treatment may bring about complete relief. Furthermore, these patients are subject to recurrence of symptoms and if they are familiar with the use of heat and exercises they may find early relief. Treatment, of course, is most effective in the early stages, since it prevents the fascial tissue stiffness encountered in the cases of long duration.

The following case is illustrative of cervical periarthritis and its response to treatment.

CASE REPORT

A woman, aged 32, complained of episodes of pain in the back of the neck. This pain was frequently worse with fatigue and was associated with radiation into the occipital area and down between the shoulder blades. On several occasions, the patient had noticed a poorly localized numbness in the hands.

Physical examination revealed the patient to be of normal habitus. Blood pressure was 110/75 mm. Hg and heart and lungs were normal to percussion and auscultation. Skeletal examination revealed a relaxed posture with increased lumbar and cervical curves. There was moderate restriction of rotation of the neck and pain on passive extention of the neck. Palpation of the deep muscles of the neck revealed tenderness extending down to the level of the fourth dorsal vertebra.

The laboratory reported a normal blood count, and x-ray examination of the cervical spine revealed no abnormal bone or joint changes. Clinical impression was cervical periarthritis associated with postural strain.

The patient was started on physical therapy as described. She was given treatments twice a week supplemented by daily postural exercises and exercises to the cervical spine at home. The patient noticed immediate improvement, and after four treatments her symptoms entirely disappeared. Follow-up observation in four weeks revealed no return of symptoms.

PHYSIOLOGIC BASIS

The physiologic basis for this treatment is not well documented by experimental data. It appears that the first effect of local heating is on the sensory nerves. The patient is more comfortable and there appears to be a certain amount of neurogenic relaxation. There may be a reflex relaxation of the muscles supplied by the same segment supplying the skin area which is heated. Through sympathetic nerve stimulation there is a general vasodilatation as shown by increased skin temperatures at distant parts. Locally, the capillary dilatation is more marked, apparently because of the direct effect of increased temperature on the capillary walls.

The effect of heat on the muscles is primarily through the increased circulation.[5] It has been shown that the flow in a limb exposed to temperature of 42 C. is on the average five times as great as when exposed to temperatures of 26 C.[6] On the other hand the external application of heat simulates a depression in the general metabolism.[7] It is true that raising the temperature of the tissues will increase the local metabolic rate. The total change in temperature of the muscular tissues after diathermy, however, has been shown to vary from 2 to 4 C.[8] In a living externalized heart of a cold-blooded animal a rise in temperature of 10 C. results in an increase in metabolism of two to three times.

It can be seen, therefore, that the increase in circulation is far in excess of the small increase in metabolism that may occur, and metabolites can be literally washed out with reduction in the irritability of the muscle.

Light massage in direction of the venous flow increases local circulation still further, and the effect of light stroking on the nerve endings enhances the neurogenic relaxation.

Deep massage, as described, softens the stiffened fascial tissue and breaks up fibrositic nodules if present. Stretching widens the intervertebral foramina with relief of paresthesias due to inflammation or possible pressure on nerve roots. Frequently, immediate relief of numbness and tingling in the hands, when present, follows the first manual stretching of the neck.

Exercises re-establish normal joint motion. Muscles made weak by inflammatory processes and disuse are strengthened by active motion and by working against resistance.

Although physical therapy is of first importance, attention should be given to elimination of causative factors and treatment of the generalized disease when present. Frequently, diet therapy and general regulation of the patient's activities is important. Fatigue states must be eliminated. Extremely important are the correction of faulty body mechanics and

posture. Exercises for posture training should be a part of every physical therapy program for patients with cervical periarthritis.

Eye strain which may be associated with cervical periarthritis is the type due to extra ocular muscle imbalance. Neck muscles have been thought of as accessory eye muscles. In cases of weakness in some of the intra-orbital extra ocular muscles, compensatory stresses may be placed on the posterior muscles of the neck. Abolishing these stresses by means of proper exercises and lenses may be beneficial.

Occupational factors must be considered. Students, draftsmen, and bench workers, for instance, may suffer because of prolonged tension on posterior neck muscles associated with leaning over their work.

In acute cases of cervical periarthritis without other associated diseases, intravenous iron in the form of iron cacodylate every two or three days may be a valuable adjunct to physical therapy. The use of salicylates is common practice and needs no comment. Occasionally, codiene or demerol may be necessary for one or two days while physical therapy is being started.

Mention should be made of the technic of local infiltration of anaesthetic drugs. Infiltration is directed into painful nodules when present and some outstanding results have been obtained especially in cases with associated neuralgic head pain.[9] This technic may be used in conjunction with physical therapy in selected cases.

SUMMARY

The objective findings in patients with cervical periarthritis may be meager. The discomfort and the disability associated with this condition may be great. Each patient should be treated carefully and thoroughly with particular attention to the local disease, and the important occupational and postural factors. Relief of symptoms will then be the rule with few exceptions.

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