

# RHEUMATOLOGY IN PRIMARY CARE

Editor

Dr. Shrikant Wagh (Rheumatologist )  
M.D. (Medicine); M.A.Sc. (Chikitsa)

SECOND EDITION



NATIONAL

**First Edition** 2012

**Second Edition** 2014

© The National Book Depot

All rights reserved. No part of this publication should be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.

This book has been published on good faith that the material provided by the author is original. Every effort is made to ensure accuracy of the material, but the publisher, editor, printer and authors will not be held responsible for any inadvertent error(s). In case of any dispute, all legal matters will be settled under Mumbai jurisdiction only.

A Project by:

KYA Foundation (Know Your Arthritis)\*

1078, Shukrawar Peth, Tilak Road,

Hirabag, Pune 411002. India.

Tel: 020 2447 8993

Website : [www.kyafoundation.org](http://www.kyafoundation.org)

\* A registered charitable trust for arthritis awareness and education



**Published by :**

**RAJU SHAH,**

**THE NATIONAL BOOK DEPOT**

Opp. Wadia Children's Hospital, Parel, Mumbai - 400 012.

Tel : 2416 5274 / 2413 1362 | Fax : 2413 0877

E-mail : [nationalbook55@gmail.com](mailto:nationalbook55@gmail.com)

**ISBN : 978-93-80206-32-0**

**Price : Rs. 200/-**

**Printed by : Neel Graphics**

## CHAPTER - 5

### LOW BACK AND NECK PAIN

Sarath Chandra Mouli Veravelli, Shrikant Wagh

Low back and neck pain are common, affecting 10-20% population each year. The pain can be acute (< 6weeks), subacute (6-12 weeks) or chronic (>12 weeks). Pain recurs (new episode after 6 months) in up to 75% cases over next year. Over 70 mechanical and systemic disorders cause axial skeletal pain in the form of neck and back pain. First step in dealing with these cases is to identify patients with systemic diseases. 90% patients of spinal pain have mechanical disorders. Mechanical pain is exacerbated by a particular physical activity and usually relieved by rest. Inflammatory, infective, infiltrative and metabolic systemic disorders are usually associated with constitutional symptoms. Serious spinal pathology and nerve root pain must be excluded in all these cases with detailed history and physical examination. 'Red Flags' must be carefully looked for in all cases of spinal pain (Table 5.1). Emotional problems, inappropriate pain, increase in pain even on slightest pressure, pain in whole limb, non-anatomic distribution and behavior of pain usually indicate an innocuous spinal pain. Various psychosocial factors are also involved in chronicity of this type of pain. Disorders such as cauda equina syndrome or myelopathy require early surgical intervention. Cost effective methods must be employed in diagnosis and management of every case with spinal pain.

Table 5.1 'Red Flags' for spinal pain

Age <20years or > 55 years	Pain in thoracic spine
No relief in supine position, nocturnal pain	History of malignancy
Malaise, fever, weight loss	Prolonged glucocorticoids
Morning stiffness	Immunosuppression
Structural deformity	HIV disease
Neurological deficit	Genitourinary, gastrointestinal,
cardiovascular diseases	

### LOW BACK PAIN

Spinal pain can arise from nerve roots, facet joints, discs, vertebral bodies, ligaments or soft tissues. However, origin of pain cannot be specified in most cases. X-Ray finding of spondylosis does not automatically mean that pain is actually arising from disc degeneration. Heavy physical work that involves bending, lifting, twisting, pushing and pulling is a risk factor for low back pain. Static postures, repetitive work and vibrations (heavy vehicle drivers) also increase the risk. Back pain is usually precipitated by an awkward movement which the patient may not remember. Such patients are often labeled as having idiopathic back pain, lumbago (pain only), low back strain (muscle pain) and sprain (ligament pain). Important mechanical causes of back pain are outlined below.

#### Lumbar spondylosis

Osteoarthritis of spine leads to disc degeneration, instability and shift of compressive forces to facet joints. Thinning of discs, narrowing of intervertebral spaces and formation of osteophytes at vertebral edges or facet joints are usual radiological findings (Fig.5.1). Pain may radiate towards lower back and posterior thigh. Pain worsens with spinal extension and is exacerbated by lateral bending on the side of affected facet joint. Pain usually increases by the end of day.



Fig. 5.1. Lumbar spondylosis - narrow discs and vertebral osteophytes

#### Sciatica

90% of sciatica (pain radiating down either leg) is due to disc herniation (mechanical component) and related inflammatory responses. History of acute onset following lifting of a heavy weight is usually present. Pain

increases with sitting, bending and raised intra-thoracic pressure (coughing, sneezing, etc). Hyper-extension of trunk in standing position increases pain. L4, L5 and S1 radicular symptoms are most common and can be observed at medial leg (knee reflex), lateral leg and lateral foot (ankle reflex) respectively. Straight leg raising (SLR) test is restricted (<60°) due to radicular pain radiating below the knee. Ipsilateral pain on SLR is a sensitive indicator whereas contralateral pain (crossed SLR) is a more specific indicator of root impingement. SLR test is less useful in elderly individuals. Pain and disability in most patients subsides within 2-4 weeks. Larger disc herniations on MRI have better chances of spontaneous resolution. Less than 5% cases need surgical decompression.

#### Spinal canal stenosis

Canal stenosis can be due to osteophytes, thickening of ligamentum flavum or posteriorly prolapsed disc. Back pain is associated with leg pain that comes on after a few minutes of walking (pseudoclaudication). Patient is required to stop and rest for a while or flex forwards for relief. Lateral stenosis causes unilateral pain whereas stenosis of intervertebral foramen causes persistent leg pain. Pain is usually progressive although patients may experience relapses and remissions.

#### Diffuse Idiopathic Skeletal Hyperostosis (DISH)

DISH is a syndrome of abnormal ossification of ligaments and tendons along the spine (Fig. 5.2). The disease is more common in males and is associated with conditions such as diabetes, obesity and hyperlipidemia. Many people with DISH have no symptoms while others develop stiffness, loss of mobility, and pain (thoracolumbar and/or cervical).



Fig. 5.2 Diffuse idiopathic skeletal hyperostosis

Thoracic spine involvement is most common followed by lumbar and cervical spine. X-Rays reveal bulky bridging osteophytes at 4 or more contiguous vertebrae and ligamentous ossification. Disc spaces and sacroiliac joints are normal. Ossification at other sites (calcaneous, patella, symphysis pubis, iliac crests, etc.) is also common. Routine laboratory tests including ESR and CRP are normal.

#### Other causes

Osteoporotic fractures of spine are not uncommon in postmenopausal females and may be painless. They are more common in thoracic spine. A history of stress fracture may provide clue in these patients.

Spondylolisthesis of various grades is anterior displacement of vertebra usually due to disc degeneration. Low back pain is exacerbated by standing and relieved by rest. Scoliosis (lateral curvature) usually starts in adolescence (F > M) and may progress slowly over years to produce neurodeficit and respiratory compromise. Inflammatory back pain (ankylosing spondylitis and others) is associated with nocturnal awakening, morning stiffness and improvement with exercise. Peripheral arthritis and other features may accompany inflammatory back pain. Tuberculosis of spine usually involves thoracic region and may be associated with systemic features.

#### Investigations

Laboratory tests must be selected on case to case basis after detailed clinical examination. Raised ESR and CRP indicate inflammatory back pain. Abnormal alkaline phosphatase, calcium and phosphorus indicate metabolic bone disease. Vitamin D examination is an expensive test and may not be ordered in all cases. Infection and malignancy should be ruled out with appropriate investigations. Protein electrophoresis is useful in suspected cases of multiple myeloma.

Imaging studies are not required in most cases of low back pain. Plain radiography often generates nonspecific findings that may not be related to cause of pain. X-Ray examination with anteroposterior and lateral views is usually sufficient for routine screening. Oblique views may be obtained if spondylolysis is suspected. MRI is superior to CT scanning as it gives soft tissue details in multiple planes. MRI reports have very high chances of false positivity. 20-30% of asymptomatic people show MRI abnormalities. Degenerated or bulging discs are seen in more than 90% of asymptomatic

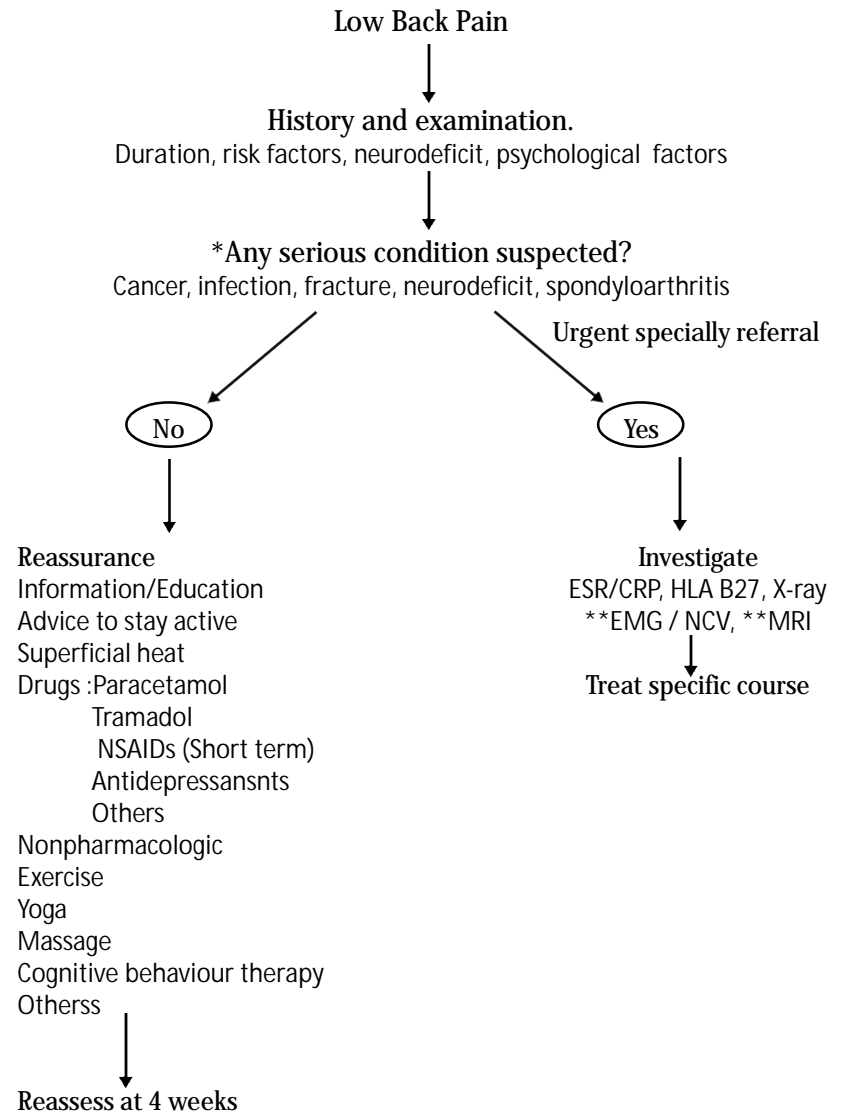
individuals aged 60 years or older. MRI should be ordered only in cases of persistent neurodeficit (pre-operative) and in those with suspected infection or malignancy. EMG and nerve conduction studies help to localize affected nerve root. MRI reports should be relied upon only if they corroborate with anatomical distribution of pain.

### Management

Management of back pain (Fig. 5.3) aims at providing appropriate information, reassurance, adequate symptom control and guidance about physiotherapy measures. All patients should be reassured that the pain is not a serious disease and that recovery is possible in most cases within a few weeks. Patients need to be educated to change their beliefs and encouraged to return to normal activities. Bed rest should not be advised for more than 2-3 days and patients must be encouraged to stay as active as possible. Joint stiffness, muscle wasting and loss of bone density are adverse effects of prolonged bed rest. Routine use of passive monotherapy such as massage, traction and ultrasound should also be avoided.

Paracetamol (2-3 grams/day) and tramadol (controlled release preferable) can be used for pain control. Non-steroidal anti-inflammatory (NSAIDs) drugs may be used during acute exacerbations for short periods. Long term use of NSAIDs should be avoided due to possible serious adverse events. Muscle relaxants, too, should be used for short periods in view of high risk of dizziness and drowsiness. Reducing muscle spasm is not beneficial in chronic back pain.

Physiotherapy exercises should not be advised during initial 4 weeks of acute back pain. Supervised exercises are first line treatment in cases of chronic back pain. A multi disciplinary program consisting of pharmacotherapy, physiotherapy and cognitive behavioral therapy is warranted for chronic back pain. Efficacy of modalities such as transcutaneous electrical nerve stimulation (TENS), short wave diathermy, laser therapy and massage remain unproven. There are no particular diet restrictions though weight reduction is desirable in all overweight patients. Aerobic fitness should be encouraged in all cases. Acupuncture, biofeedback and Yoga can be used as complementary therapies. There is good evidence that Yoga is helpful in cases of chronic back pain.



\*Fever, weight loss, advanced age, incontinence, neurodeficit, osteoporosis, glucocorticoids, morning stiffness, improvement with exercise.

\*\*EMG/NCV and MRI for herniated disc or spinal cord stenosis only if no response to conservative management at the end of 4 weeks.

Fig. 5.3 : Approach to Low Back Pain

Local areas of muscle spasm (trigger points) may be injected with an anesthetic along with glucocorticoid. Facet block and epidural steroid injections are used in selected cases. 38% patients respond to placebo injections too.

Surgical intervention (laminectomy, discectomy, vertebroplasty, spinal fusion) is required in less than 1% cases who do not respond to conservative therapy. Surgery is also indicated in cauda equina syndrome, infections, fractures and malignancy. Surgery offers early symptom relief in sciatic leg pain but does not relieve back pain or does not cure the disease process. There is no difference in quality of life amongst operated and non-operated cases at the end of 2 years although pain relief is faster with surgery. Surgery does not relieve pain in 10-40% patients ('failed back surgery'). There is no difference in long term outcome following an early surgery versus surgery after 4 months. Success rate of decompression surgeries is variable. Repeat surgery is less likely to have good clinical outcome.

All patients must be instructed regarding proper posture and life-style changes. Some of the important instructions include the following:

1. Stay active. Do regular exercises as advised by physiotherapist.
2. Learn to lift things correctly.
3. Learn correct posture. Avoid bending over for long periods.
4. Use medium firm mattress. Benefits of firm mattress are unproven.
5. Corsets, braces and traction are not helpful and may be deleterious in the long term.
6. Maintain proper weight.
7. Find ways of dealing with stress - stress increases muscle tension and leads to more pain.

## NECK PAIN

Neck pain is a common complaint in primary care practice. 10-20 % of adult population report neck pain at any given time. Prevalence of neck pain increases with age and is more common in females than males. Rates of recurrence and chronicity are high in cases with neck pain. The diagnostic and therapeutic principles of management in these cases are similar to those in chronic back pain. The outcome in most patients with neck pain is likely to be favorable with proper management. Abnormal images on X-Rays are common finding and not always associated with symptoms. Anatomy of

neck is very complex and pain may arise from various structures (vertebra, disc, ligaments, and muscles) singly or in combination. Systemic causes of neck pain are similar to those of back pain. Some of the mechanical causes are outlined below.

### Neck strain

Neck strain usually follows sleeping in an awkward position or rapid turning of head. Unilateral or bilateral pain in the middle or lower part of posterior neck is often due to neck strain. Pain may be more diffuse and radiate to head and shoulder. Localized tenderness (myofascial pain) in paracervical, trapezius or sternocleidomastoid muscles may also be present. Trigger points and myofascial pain are nonspecific diagnosis which can be associated with other pathologic conditions as well as insomnia, pain sensitization (fibromyalgia) and depression.



Fig. 5.4. C 5-6 spondylosis

### Cervical spondylosis

Degenerative changes in cervical spine can be seen in many asymptomatic adults older than 30 years of age. Pain is usually diffuse and may radiate to shoulders, interscapular area and suboccipital region. Physical examination may reveal midline tenderness. There is poor correlation between degree of pain and severity of radiographic changes. Most patients have recurrent relapses of pain with intervening pain-free periods. Some patients may have tinnitus and vertigo. Myelopathy is the most serious complication of cervical spondylosis and may not be associated with neck pain. Cord compression leads to various neurologic features such as weakness, incoordination and spasticity of upper as well as lower extremities. Gait may become abnormal. Bladder or bowel incontinence is usually a late manifestation.

## Cervical discogenic pain

Cervical discogenic pain is a common cause of neck pain. Disc degeneration leads to uneven pressure distribution leading to mechanical pain without inflammation. Axial neck pain is more common than extremity pain and the pain occurs on turning or tilting the head. Pain may be worsened when the neck is held in one position for prolonged periods (driving, reading, or working on computer). Muscle tightness and spasm is often associated with neck pain. Neck pain related to facet joint is also similar though more common in occupations with prolonged neck extension (wall posters, painting of ceiling) and after whiplash injury.

## Whiplash

A blow from behind (e.g. car accident) leads to an abrupt forward/backward movement of the cervical spine. Cervical muscles are stretched or torn during such hyperextension injuries. Sympathetic ganglia may also be damaged along with various soft tissues. Symptoms of cervical whiplash syndrome usually start 12-24 hours after the accident. These include severe pain, paraspinal spasm and loss of range of movement in neck. There is no neurodeficit. X-Rays are normal. Pain following whiplash injury may become chronic (> 6 months) due to unknown mechanism.

## Other causes

Torticollis is a rotational deformity of cervical spine which can be congenital or acquired due to infective, inflammatory and traumatic causes. Head is tilted towards the affected side while the chin points towards the opposite side. Cervical rib can be large enough to cause a palpable tender lump in supraclavicular fossa. It leads to vascular and/or nerve pressure symptoms (thoracic outlet syndrome). Polymyalgia rheumatica presents with symmetric pain and stiffness of shoulder and hip girdle muscles in elderly (>50years) people. Fever, fatigue, anorexia and weight loss may occur. ESR/CRP are raised in this condition. Cervical lymphadenopathy can be painful. Pain in neck may be referred from aorta, heart and lung. Involvement of cervical spine is common in ankylosing spondylitis and DISH syndrome. Atlanto-axial joint can be involved in rheumatoid arthritis.

## Investigations

Laboratory tests are similar to those for back pain. Patients above 65 years of age, those with neurologic features and those with history of dangerous injury

should undergo X-Ray examination for acute neck pain. Other low risk patients do not require imaging. Routine use of MRI or CT scan in patients without neurodeficit is not justified. Abnormal imaging results in these patients may not corroborate with clinical features in a given patient.

## Management

All patients with chronic neck pain should be reassured of a good prognosis and educated for early return to normal activity. Drug therapy for neck pain is similar to that for low back pain. Local injections of trigger points with anesthetic agents and glucocorticoids help in neck strain. Physiotherapy exercises (stretching and strengthening) are extremely important in management of chronic neck pain. Intermittent traction may be combined with these physiotherapy measures. Prolonged use of collars should be discouraged. Manipulation and mobilization along with physiotherapy exercises are useful in mechanical neck pain.

Early surgical intervention should be considered in patients with myelopathy. However, less than 20% patients with disc herniation alone will require surgery. Other conditions do not require surgery.

Proper posture and life-style changes that must be informed to all patients include the following:

1. Avoid sitting in the same position for prolonged periods of time. Take periodic five minute breaks.
2. Adjust computer screen to eye level.
3. Avoid placing pressure over the upper back with backpacks, over-the-shoulder purses, or children riding on shoulders.
4. Avoid prolonged overhead work.
5. Use the arm rests to keep the arms supported.
6. Sleep with your neck in a neutral position by sleeping with a small pillow under the nape of your neck (sleeping on your back) or sleeping with enough pillows to keep your neck straight in line with your body (sleeping on your side). Do not sleep in prone position.
7. Avoid holding phone between ear and shoulder.