Transverse Process Fracture

A *fracture* of a bone is the same as a break in the bone. A fracture of a *transverse process* is a break of a part of one of the bones in the spine. This part extends out from the side of the main body of the bone (called the vertebral body). A transverse process is shaped like a wing. They extend from both the left and right sides of the vertebral body.

Many of these injuries occur in the *thoracic spine* (the upper and middle parts of the back) and the *lumbar spine* (the low back area). In the elderly, these injuries can also occur in the lower neck area and are affected by age-related arthritis problems and *osteoporosis* (thinning of bone).

It takes a lot of force to cause this type of fracture. Because other organs and so many other parts of the spine are close to the transverse processes, these fractures usually occur at the same time as injuries to:

- Other bones.
- Organs.
- Possibly the spinal cord.

Even if there is only a break to one transverse process, your caregiver will take steps to make sure that a nearby organ has not also been injured.

CAUSES

Most of these injuries occur as a result of a variety of accidents such as:

- Falls.
- Motor vehicle accidents.
- Recreational activities.
- A smaller number occur due to:
  - Industrial, agricultural, and aviation accidents.
  - Gunshot wounds and direct blows to the back.
  - Parachuting incidents.

SYMPTOMS

Patients with transverse process fractures have severe pain even if the actual break is small or limited and there is no injury to nearby bones, organs, or the spinal cord. More severe or complex injuries involving other bones and/or organs may include:

- Deformity of the back bones.
- Swelling/bruising over the injured area.
- Limited ability to move the affected area.
- There may be injury to a nearby:
  - Lung
  - Kidney
  - Spleen
  - Liver

Injury to nearby nerves can cause partial or complete loss of function of the bladder and/or bowels. More severe injuries can also cause:

- Loss of sensation and/or strength in the arms/hands (if the break is in the lower part of the neck), legs, feet, and toes.
- Spinal cord injury that leads to paralysis.

DIAGNOSIS

In most cases, a broken bone will be suspected by what happened just prior to the onset of back and/or neck

pain. X-rays and special imaging (CT scan and MRI imaging) are used to confirm the diagnosis as well as finding out the type and severity of the break or breaks. These tests are important for guiding and planning treatment.

There are times when special imaging cannot be done. MRI cannot be done if there is an implanted metallic device (such as a pacemaker). In these cases, other tests and imaging are done.

Other tests may be done if your caregiver is concerned about injuries to internal organs near the break of the transverse process. For example, an ultrasound may be ordered to examine the liver, spleen, or kidneys.

If there has been nerve damage near the break, additional tests may be ordered in order to find out:
- Exactly how much damage has occurred.
- To plan for what can be done to help.

These include:
- Tests of nerve function through muscles (*nerve conduction studies* and *electromyography*).
- Tests of bladder function (*urodynamics*).
- Tests that focus on defining specific nerve problems before surgery and what improvement has come about after surgery (*evoked potentials*).

TREATMENT

If the injury is limited to a break of a transverse process with no other bone or organ injury, hospital care may not be necessary. Medication for pain control, special back bracing, and limitations in activity are done first followed by physical therapy later.

Complex breaks, multiple fractures of the spine, or unstable injuries can damage the spinal cord and may require an operation to remove pressure from the nerves and/or spinal cord and to stabilize the broken pieces of bone. Specialty care may be needed if there has been injury to an internal organ near a broken transverse process. Each individual set of injuries is unique, and your caregiver will review many things when planning the best approach that will give the highest likelihood of a good outcome.

HOME CARE INSTRUCTIONS

There is pain and stiffness in the back for weeks after a transverse process fracture. Bed rest, pain medicine, and a slow return to activity are generally recommended. Neck and back braces may be helpful in reducing pain and increasing mobility. When your pain allows, simple walking will help to begin the process of returning to normal activities. Exercises to improve motion and to strengthen the back may also be useful after the initial pain goes away. This will be guided by your caregiver and the team (nurses, physical therapists, occupational therapists, etc.) involved with your ongoing care. For the elderly, treatment for osteoporosis may be essential to help reduce your risk of fractures in the future.

Arrange for follow-up care as recommended to assure proper long-term care and prevention of further spine injury. It is important that you participate in your return to good health. The failure to follow up as recommended with your caregiver, orthopedic referral or other provider may result in the bone not healing properly with possible chronic disability or pain.

SEEK MEDICAL CARE IF:

- Pain not effectively controlled with medication.
- You feel unable to decrease pain medication over time as planned.
- Activity level is not improving as planned and/or expected.

SEEK IMMEDIATE MEDICAL CARE IF YOU HAVE:

- Increasing pain, vomiting, or are unable to move around at all.

- Numbness, tingling, weakness, or paralysis of any part of your body.
- Loss of normal bowel or bladder control.
- Difficulty breathing, cough, fever, chest or abdominal pain.

MAKE SURE YOU:

- Understand these instructions.
- Will watch your condition.
- Will get help right away if you are not doing well or get worse.

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