What symptoms can be caused by spinal column injuries?

· External signs of injury (abrasions, bruises, and effusions in the vicinity of the spinal column), though the presence of external signs of injury cannot confirm the presence of a vertebral fracture or a change in spinal column stability.
· Bad posture or a change in posture to relieve symptoms
· Pain
· Motor deficits
· Sensory deficits
· Medullary/radicular symptoms

Damage to the spinal cord (medullary) results in sensory and motor deficits and colon, bladder, and sexual dysfunctions, depending on the segment(s) of the spinal column injured.
Damage to the spinal nerve roots (radicular), usually caused by the pinching of nerve roots in the area of the foramina intervertebralia, causes motor and sensory deficits in the corresponding area supplied by the affected spinal nerve.
About 2/3 of all paraplegias result from accidents with vertebral fractures or isolated spinal cord pinching without a vertebral fracture, though the latter are quite rare and occur mainly in children and adolescents.
All other paraplegias are caused by congenital anomalies of the spinal column and spinal cord, tumors, inflammatory processes, or circulatory problems in the spinal cord.
Signs of a complete paraplegia (tetraplegia):
· Floppy paralysis below the damaged vertebral segment
· Complete loss of sensitivity below the level of injury
· Both proprioceptive and polysynaptic reflexes no longer function
· Complete paralysis of bladder, colon, and sexual functions
· Failure of vascular and heat regulation which, depending on the level of the spinal column injury, can result in spinal shock with hypotension, slowed heartbeat (bradycardia), or even heart failure and respiratory difficulties of differing severity including respiratory failure.

What classification systems are used to assess motor and sensory deficits?

The two classification systems in common use are the scale developed by the “American Spinal Injury Association”
(ASIA), and the Frankel Scale.

ASIA classification of motor deficits:
0 = Complete paralysis
1 = Visible or palpable muscle contraction
2 = Full range of active movement when gravity is eliminated
3 = Full range of active movement against gravity
4 = Full range of active movement against some resistance
5 = Active movement against full resistance
NT = Not testable

ASIA classification of sensory deficits in relation to each dermatome:
0 = Absent
1 = Impaired
2 = Normal
NT = Not testable

Frankel scale for the assessment of paraplegic (tetraplegic) symptoms:
A = Complete paraplegic syndrome, no motor or sensory functions in sacral segments S4-S5
B = Incomplete paraplegic syndrome, no motor function, sensory function detectable in segments S4 and S5
C = Incomplete paraplegic syndrome, motor function is preserved below neurological level, corresponding reference muscles show a degree of muscular strength below Janda 3.
D = Incomplete paraplegic syndrome, motor function is preserved below the damaged segment, corresponding reference muscles show a degree of muscular strength above Janda 3.
E = Motor and sensory functions are normal