Although a radicular artery from the aorta accompanies the nerve root at many levels, most of these contribute little flow to the spinal cord itself. The anterior spinal artery is formed from the junction of two branches, each from one of the vertebral arteries. It supplies blood to the anterior 2/3 of the spinal cord. Branches include sulcal arteries which also supply the anterior horns of the gray matter. Major contributions to the anterior spinal cord are from 6–9 radicular arteries in variable locations, which may include the following ("radiculomedullary arteries," the levels listed are fairly consistent, but the side varies

1. C3—arises from the vertebral artery

2. C6 and C8 (\approx 10% of the population lack an anterior radicular artery in lower cervical spine)

a) C6-usually arises from a deep cervical artery

b) C8—usually from the costocervical trunk

3. T4 or T5

4. artery of Adamkiewicz AKA arteria radicularis anterior magna

a) the main arterial supply for the spinal cord from \approx T8 to the conus

b) located on the left in 80%

c) situated between T9 & L2 in 85% (between T9 & T12 in 75%); in the remaining 15% between T5 & T8 (in these latter cases, there may be a supplemental radicular artery further down)

d) usually fairly large, gives off a cephalic and caudal branch(latter is usually larger)giving a characteristic hair-pin appearance on angiography

The paired posterior spinal arteries are less well-defined than the anterior spinal artery and are fed by 10–23 radicular branches.

Anastomotic vessels between the anterior and posterior spinal arteries are called vasocorona.

The midthoracic region has a tenuous vascular supply ("watershed zone"), possessing only the abovenoted artery at T4 or T5. It is thus more susceptible to vascular insults.

► Anatomic variants. Arcade of Lazorthes: normal variant where the anterior spinal artery joins with the paired posterior spinal arteries at the conus medullaris.

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