The typical transverse processes of the thoracic vertebrae are large, club-like processes that project postero-laterally from the pediculo-laminar junction. Anteriorly, near the tips, are oval, concave facets that articulate with the tubercles on the sixth pair of ribs at the costotransverse joints. Medial to the facets the costotransverse ligaments attach, and lateral to them, at the apex of the tubercles, the lateral costotransverse ligaments attach.

Multifidus and semispinalis thoracis attach to the posterior surfaces and rotatores thoracis attach mediolaterally to the superior surfaces. The longissimus thoracis muscles attach to the apexes of the transverse processes, with the levatores costarum muscles attaching posterior to them.