

Amandas case study

Business



The functioning parts of the skeletal system that is compromised in brittle bone syndrome is the diaphysis which is the top the main portion of bone, the epiphysis which is the distal part of the bone, the metaphyses the region between the diaphysis and epiphysis, the epiphysis plate which is the layer of hyaline cartilage that allows the diaphysis of the bone to grow in length, the articular cartilage the thin layer of hyaline cartilage covering the part of the epiphysis where the bone forms an articulation with another bone and reduces friction and absorbs shock at freely movable joints, the medulla cavity that contains yellow bone marrow later in life, the endosteum that is connective tissue membrane that contains bone-forming cells. All of these combine to help with the functioning of supporting soft tissue and providing attachment for skeletal muscles. They protect internal organs and assist in movement together skeletal muscles.

They store and release minerals and contain red bone marrow, they produce blood cells and they also contain yellow bone marrow which stores triglycerides. All of these are affected with normal development with Manta's brittle bone syndrome.

3. If I was Manta's surgeon the layers of tissue I would have to cut through to fix Manta's leg to get to her femur to the medulla cavity would be starting with the epidermis of her skin, next I would proceed through her dermis layer of skin, followed the hypodermic layer of skin. At that point after surgically cutting through the first three layers of skin I would be at her periosteum of compact bone, then after cutting through the periosteum into the compact bone I would be to the medulla cavity of Manta's femur bone.

If we are going through even more technical terms I would actually start the incision at the femur which is located in a thicker region of skin area with the epidermis then the stratum corneum, followed by the stratum lucidum, then stratum granulosum, then stratum spinosum, then stratum basale, then my next incision would be the papillary region of the dermis followed by the reticular region of the dermis making my next incision into the hypodermis through adipose tissue, that would then bring me to the compact bone which is covered by periosteum that would be a thin layer of dense irregular connective tissue that surrounds the compact bone then I would make my next incision through the compact bone into the medulla cavity. C.

Manta's mother should know that the medulla cavity (is the middle of the rest of the compact bone) is the right place for the rod to go into Manta's femur because it grows with the bone. The reason the rod will grow with the bone is because the medulla cavity is not where the bone growth of Manta's leg takes place. The actual place that Manta's leg grows is the epiphyseal plate.

This plate is located at the metaphysis in femur bone. The metaphysis (is the neck of the bone basically) is the region of the bone between the diaphysis (is the upper part of the compact bone) and epiphysis (is the lower part of the compact bone) of the bone. In a growing bone this is where the epiphyseal plate is located.

The epiphyseal plate is a layer of hyaline cartilage that allows the diaphysis of the bone to grow in length. When the bone growth length stops, the cartilage

in the epiphysis plate is replaced by osseous tissue and the resulting bony structure is known as the epiphysis line. Linking, K. T. (n. D.

). Anatomy and Physiology 2nd edition. Wiley.