

SHORT ABSTRACT

Imaging in Pediatric Oncology in the Real World

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Childhood and adolescent cancers are rare and account for less than 2% of all cancer in industrialized countries. Cancer is nonetheless the second most common cause of death in children in the developed countries. With the improvement of specific diagnostic procedures and the introduction and continuous adjustment of multimodal treatment strategies, there has been a significant rise in the probability of cure in the last decades.

Early diagnosis of cancer in children is often hampered by the similarity of the symptoms to more common diseases. Certain worrisome symptoms, such as an unusual mass or swelling; frequent headaches, with or without vomiting; persistent, localized pain or limping; prolonged, unexplained fever or illness; sudden vision disturbances; and unexplained weight loss may prompt health care providers to order an imaging test. Consequently, the radiologist is often the first doctor to establish the diagnosis of a malignancy.

In this time of sophisticated cross-sectional and functional imaging, conventional radiographs and ultrasound still play a major role in the initial diagnosis of pediatric malignancies. Both imaging modalities are

easy to perform, rapid, and inexpensive, they require no sedation or general anesthesia and deliver no or very little ionizing radiation. With conventional X-rays, an intrathoracic mass or a bone tumor can be detected, and ultrasound is an excellent method for screening the abdomen, pelvis, neck, superficial soft tissues, and even the brain in young infants.

Once the diagnosis of a malignancy is confirmed, additional imaging studies (CT, MRI, or scintigraphic studies) will be performed for staging.

All types of pediatric cancer are treated according to international trials with strict guidelines. In the last decade, radiologists have been increasingly involved in the creation of these protocols warranting the quality of the imaging workup. The role of imaging is essential during the whole course of the disease as it will be used for monitoring chemotherapeutic treatment, detecting complications, surgery planning, and for follow-up after achieving remission.

Competing Interests

The author has no competing interests to declare.

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