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**Diagnosis of Kaschin-Beck disease
(English Translation)**

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1 Scope

This standard specifies the diagnostic principles, technical indicators and application requirements of Kashin-Beck disease.

This standard applies to the diagnosis of Kashin-Beck disease cases and the differentiation from other bone and joint diseases.

2 Terms and definitions

The following terms and definitions apply to this document.

Kashin-Beck disease

Kashin-Beck disease is endemic and deformable osteoarthropathy that occurs in children and adolescents. The primary lesions are mainly epiphyseal cartilage and epiphysis during bone development.

Multiple symmetrical degeneration and necrosis of plate cartilage and articular cartilage, as well as secondary degenerative osteoarthropathy; clinically manifested as limb joint pain, Thickened, deformed, restricted activities, muscle atrophy, severe deformities of short fingers, short limbs or even shortness.

3 Principles of diagnosis

Early calcification of metacarpal and phalangeal bones, bone articular surfaces of wrist joints, and metaphysis based on ward contact history, symptoms and signs and hand

X-rays the multiple symmetrical depression, hardening, destruction and deformation of the belt and other related diseases are excluded to diagnose the disease. Multiple symmetry of distal phalanx X Line changes are characteristic indications of the disease.

4.1 Diagnosis

According to the history of exposure to the disease area for more than 6 months, there are signs of multiple, symmetrical thickening of the finger joints or brachydactyly (toe) deformities, and other signs are excluded Related diseases (see Chapter 6 Differential Diagnosis) were diagnosed as clinical cases of Kashin-Beck Disease. See Appendix A for clinical examination methods.

4.2.1 Degree I

There are multiple, symmetrical thickening of the finger joints, thickening of other limbs, limited flexion and extension, pain, and mild muscle atrophy.

4.2.2 Degree II

On the basis of degree I, symptoms and signs aggravated, and short finger (toe) deformity appeared.

4.2.3 III degree

On the basis of degree II, symptoms and signs aggravated, and short limbs and short deformities appeared.

5.1 Diagnosis

Hand X-rays with bone-end X-ray signs or multiple symmetrical X-ray signs of metaphysis are diagnosed as Kashin-Beck disease X-ray cases. Hand X when the line examination is difficult to diagnose, add a lateral view of the ankle joint. See Appendix B for X-ray examination methods and diagnosis.

5.2.1 Active

Before the epiphyseal stage, have the following

- a) Metaphyseal early calcification trabecular structure disorder;
- b) Metaphyseal early calcium O Metaphyseal anterior carpal changes, trabecular bone Structural disorder.

5.2.2 Inactive

Epiphyseal stage

o Metaphyseal

b) Not accompanied by

5.2.3 Chen 1 day type

After the metaphysis is closed

5.3.1 Mild

Has the following conditions

a) Only metaphysis

b) Only bone end disease Appendix A (Normative appendix) Clinical examination method

A. 1 Preparation before inspection A. 1.1 The examiner should develop the habit of checking in order to avoid omissions.

A. 1.2 Fully exposed areas to be inspected. In winter, the examinee will be inspected after 10min~15min after entering indoors from outside.

A. 1.3 During the inspection, demonstrate to the examinee and point out the main points.

A. 2 Upper limb examination A. 2.1 Drooping knuckles Extend the subject's hands straight, parallel to the examiner's line of sight, check whether the second, third, and fourth fingertips are bent to the palm side, pay attention to the dorsal side of the end Heberden nodules.

A. 2.2 Thickening of knuckles Healthy people's fingers are straight and close together, and there is no gap between the fingers; when the joints are thickened, the fingers are not close together, there are gaps between the fingers, and the thickened parts are hard to touch.

The typical thickening is in the shape of a grate.

A. 2.3 Brachydactyly A healthy person has 5 fingers close together, the back of the hand is up, and the height of the fingers is the middle finger, ring finger, index finger, little finger, and thumb.

The ratio of palm to transverse diameter is less than 1, indicating brachydactyly.

A. 2.4 Major and minor thenar muscle tension Healthy people's large and small thenar muscles are plump and have tension when touched; when the muscles are atrophy, they are not plump, and they feel soft and without tension.

A. 2.5 Gassho Test

A healthy person brings the palms of the hands together, and then raises the elbows, so that the two forearms are placed at the same level; when the wrist joints are affected, when the two forearms are placed at the same level, both hands Palm apart.

A. 2.6 Back palm test If the backs of the hands of a healthy person are put together, the two

forearms can be placed at the same level; when the wrist joint is affected, the two forearms cannot be placed at the same level.

A. 2.7 Pronation and supination test in healthy people, bend the elbows 90° with both upper limbs, the upper arms should be close to the chest wall, the fingers should be straight, the thumbs facing the sky (neutral position), then the palms should be pronation or supination, palm the surface can be parallel to the horizon; when the radial or ulnar head is involved, the palm surface forms an angle with the horizon when pronation or supination.

A. 2.8 Elbow

The upper limbs of healthy people can be straightened forward. when flexion contracture, the movement of flexion and extension is limited, the range of motion becomes smaller, and the elbow is bent.

A. 2.9 Shortening of the humerus the forearms of a healthy person are close to both sides of the chest wall. When the fingers touch the acromion, the wrist is under the acromion; when the humerus becomes shorter, the wrist is on the acromion.

A. 2.10 Biceps tension when a healthy person flexes the forearm forcefully, the biceps will be plump, tenacious and strong to the touch; when the muscle is atrophy, the biceps will not be plump, soft and weak to the touch.

A. 3 Lower limb examination A. 3.1 Squat check Healthy people can squat completely; when any of the hip, knee, and ankle joints have flexion movement disorders, they cannot squat completely; or they can squat completely, but the heel is off the ground.

A. 3.2 Calf length

In a healthy person, the length of the thigh measured from the greater trochanter to below the lateral condyle of the femur and the lateral gap of the knee joint, and from the upper edge of the tibial plateau to the knee joint.

The ratio of the calf length from the lateral gap to the medial malleolus is 4.3; when the tibia and fibula become shorter, the ratio increases.

A. 3.3 Half squat leg lift test Healthy people can stand on one leg with the knee joint in half flexion position, with the left and right legs exchanged; when the knee joint is affected, they cannot stand on one leg.

A. 3.4 Gastrocnemius tone when a healthy person stands upright, the gastrocnemius muscle is plump and tense when he touches it; when the muscle is atrophy, it is not plump and soft.

A. 3.5 Ankle flexion and extension disorders the outer edge of the foot is perpendicular to the calf (neutral position), and the ankle joint of healthy people can extend 25° plantar flexion 45°; when the ankle joint is affected, the angle of flexion and extension becomes smaller.