

be wished. These are covered with thick India-rubber, and are connected by means of a strong pivot. Attached to this pivot is the screw, into one end of which is fitted the appliance for making pressure, the other end terminating in a strong handle. This arrangement of the arms and of the screw, connected by a pivot, admits of pressure being applied at any point, and counter pressure at any two points that may be desired. Underneath this pivot is a nut, by means of which the arms and the pivot can be firmly screwed together.

In operating on a femur for genu valgum, in order to break it, a wedge-shaped appliance with rounded edge of polished steel is fitted to the screw. One curved arm of the clamp is placed on the outside of the femur just above the epiphysis, the other arm four or five inches higher up the limb. The screw with the wedge is applied two or two and a-half inches above the condyle, on the inner side of the bone. Having decided upon the exact position of the points of pressure, the clamp is removed from the limb, and must be firmly screwed together by means of the nut which is on the under side of the clamp. A wrench for the purpose is supplied by the makers. The clamp having been reapplied in the desired position, which has been previously marked on the limb, must be carefully held there by an assistant; the screw must be quickly and forcibly turned, compressing the wedge in on the bone, and generally in about twenty or thirty seconds it will be heard to break at the point of pressure. For bow-legs I use a flat appliance, which is covered with felt or India-rubber. The clamp having been applied to the limb, the bones are forcibly pressed into the wished-for position.

In the cases I have operated on, I was surprised at the very small amount of injury inflicted on the skin. After the third day, with one exception where the skin got entangled, but slight ecchymosis remained at the points of pressure. All my cases ran the ordinary course of simple fracture. I do not pretend to recommend the indiscriminate adoption of this method of cure for genu valgum. When the patient's age exceeds twelve years, the great amount of pressure required to break the bone becomes a matter for serious consideration.

At first I found it extremely difficult to cut across the bones of very young children, owing to their bending. This difficulty has been overcome by approximating the arms of the clamp. The clamp has proved successful with a girl, aged 14 years and 11 months, and also with one 17 years of age.

From all I can see, I believe this operation for genu valgum, in trained hands, will obviate the necessity for osteotomy in many cases. An experienced assistant who has learned to work with the operator is also very necessary. The following is the history of some of the patients upon whom I have already operated:—

M. L., aged 3 years, admitted November 16th, 1887, an ill-nourished child. Both legs were badly bowed at lower third; the outer ankles touched the ground when she attempted to walk. December 3rd. Fractured left tibia and fibula with a screw clamp, using felt pads at the points of pressure; put up the limb quite straight in a paste-board splint, having enveloped it in Gamgee tissue. January 31st, 1888. Left leg rapidly recovered as an ordinary simple fracture; now quite straight. Fractured right tibia and fibula to-day, using the same clamp, and having straightened the limb, put it up in the same manner as the left leg. April 6th. Right leg quite united and straight. Patient dressed and up; stood with the assistance of a chair. September 22nd. Had been in the country for five months, was much improved in health; limbs quite straight; could walk holding on to the nurse's hand.

J. K., aged 3½ years, admitted June 5th, 1888, suffering from bow-legs. He was a patient of Dr. Ashley Cummins, who kindly asked me to operate. June 6th. I fractured in the lower third, and straightened the right leg, which was treated in the same manner as my first case. 20th. Fractured and straightened left leg. July 26th. These fractures having united without any trouble, the patient was discharged cured to-day.

M. S., aged 11 years and two months, always suffered from double genu valgum, of such severity that she could at no time walk more than 200 yards without assistance; she had previously undergone a variety of treatment, and my colleague, Dr. Ashley Cummins, having decided to perform osteotomy, consulted me with regard to the matter. On expressing to him a wish that I should be allowed to try if it would be possible to fracture her thigh with the screw clamp, he kindly handed her over to me for treatment. On July 25th, 1888, I operated in the manner described, using a timber wedge covered with felt to fracture her left femur. The bone was broken 2½ inches above the joint. There was no difficulty in the operation. The arms of the clamp were separated 4½ inches; the time of pressure about 25 seconds. There was no skin wound. The limb having been enveloped in Gamgee tissue a long splint was applied. 29th. Examined her thigh to day. There was only slight ecchymosis at the points of pressure. She had no pain; temperature normal. September 13th. Her limb was quite straight and firm; she was able to stand with slight assistance to have her photograph taken. 14th. Fractured her right femur to-day, using a steel wedge, which was covered with India-rubber. There was no skin wound. Put her up as before in Gamgee tissue and a long splint. 23rd. Limb quite straight, doing well; temperature normal. 29th. Limb put up in a plaster bandage. October 26th. Doing well. Limb quite straight.

H. W., aged 3½ years; double knock-knee. May