

Radiological Evaluation of Patellofemoral Joint in Hemophilic Arthropathy

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OBJECTIVES

Recurrent bleeding episodes affect the patellofemoral compartment as well as the tibiofemoral compartment of the knee joint. During the course of the hemophilic arthropathy chronic, progressive, and irreversible changes develop inevitably in the distal femur and patella. The aim of this study was to evaluate quantitatively the radiological changes of the patellofemoral joint with respect to the severity of joint involvement.

METHODS

Thirty three knees of 24 male patients with a mean age of $30,30 \pm 12,67$ (range, 13 to 57) were included in this retrospective study. To assess the severity of joint involvement, Pettersson scores (PS) of 32 knees were determined on conventional knee radiographs, zero being the best and 14 being the worst score. The knees were grouped into two as mild-moderate with PS equal to and less than seven (14 knees, group I), and severe with PS greater than seven (18 knees, group II). Besides PS, the patients were also grouped according to their ages as below or above 25 years old. The dimensions of patella (mediolateral length and anteroposterior width) and distal femur (length of transepicondylar axis (TEA), and sulcus (S)) were measured on axial MRI or CT sections and the results were adjusted with respect to the magnification ratios (Figure 1). Statistical analyses were performed utilizing SPSS v16. T- test was used to compare the measured values of two groups. Statistical significance was set at 0,05.

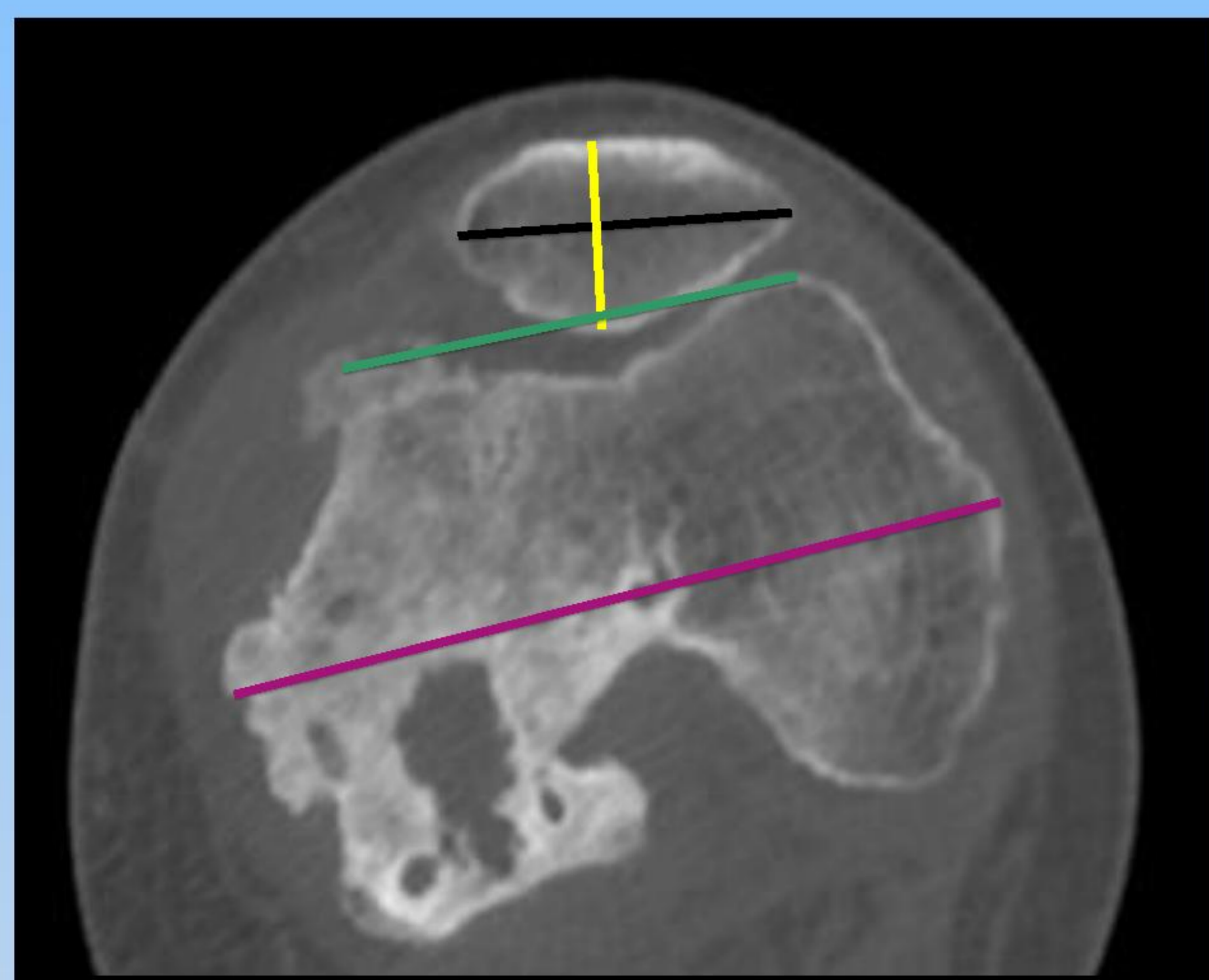


Figure1. Axial image of a CT section of knee joint
— Length of patella — Width of patella
— Length of S — Length of TEA

RESULTS

Twenty six knees (78,5%) were operated, ten of them were total knee prosthesis. The mean PS value was $8,56 \pm 3,84$. Alterations in patellar morphology was observed in 16 knees (48,5%). Patellar tilt was present in 15 knees (45,5%); six of them were medial and nine were lateral. The mean length and width of patella was $40,31 \pm 9,32$ and $18,04 \pm 6,73$ in group I whereas $43,98 \pm 6,56$ and $20,19 \pm 7,14$ in group II, respectively. Despite being insignificant, in group II patella was found to be larger and longer ($p=0,393$ and $0,201$, respectively); the distal femur widened with an increase in length of TEA ($p=0,583$). The length of sulcus and ratio of S over TEA increased in group II. Patellofemoral synostosis was observed in one patient. When patients were grouped according to their ages (below and above 25), the ratio of length of patella over TEA was significantly greater in the older group ($p=0,041$).

CONCLUSIONS

The typical morphological changes in the patellofemoral joint develop in accordance with the progression of hemophilic arthropathy, though the difference in the findings of cases with advanced and mild involvement are not statistically significant.

REFERENCES

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