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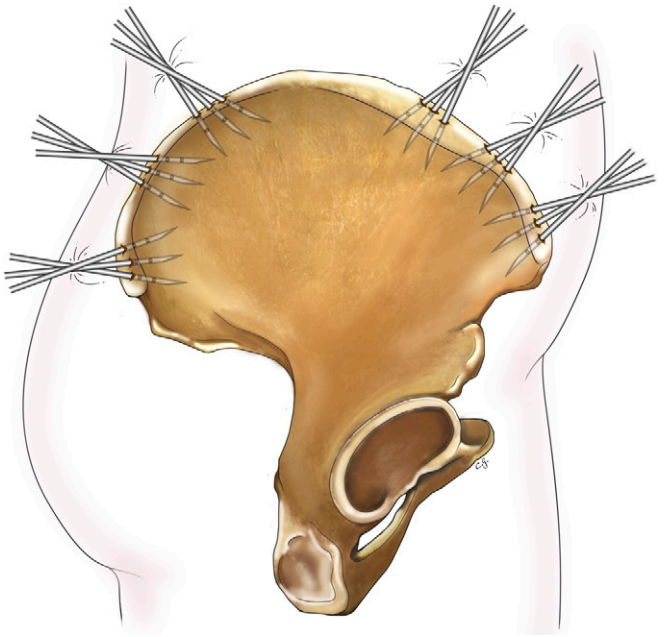

Fig. E-1

The aspiration technique. Bone marrow samples were collected from the anterior and posterior iliac crest of each patient. A 14-gauge needle was inserted from a single location in the skin into the cortex of the iliac crest and slowly advanced into the marrow cavity. A 20-mL syringe was used to obtain three 2-mL samples of bone marrow aspirate, changing the direction of the needle tip between samples so that a new puncture could be made in the iliac crest. This procedure was performed a total of three times in the anterior iliac crest and three times in the posterior iliac crest, yielding approximately 20 mL of bone marrow from each site.

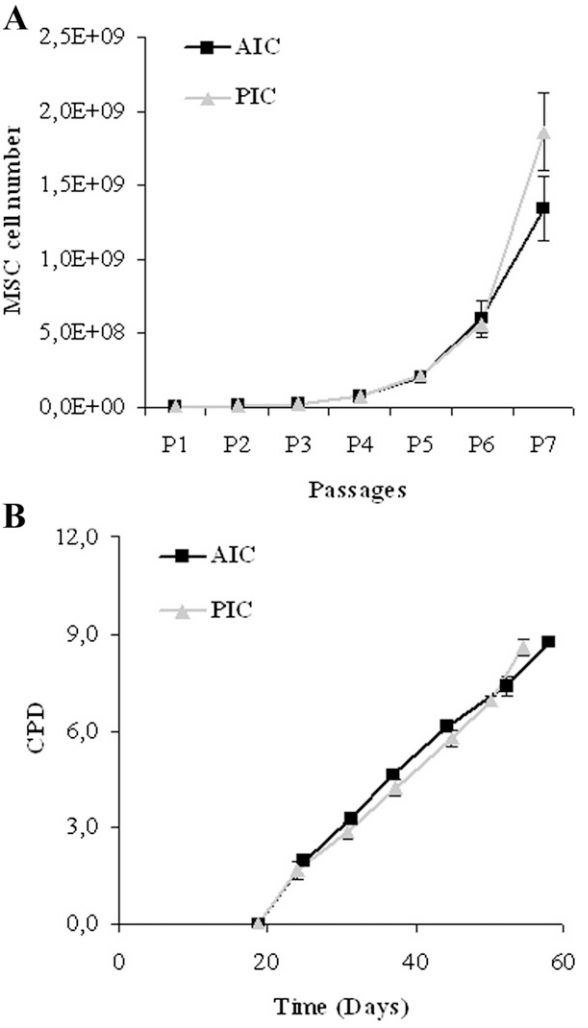

Fig. E-2

The influence of the anatomic site of bone marrow aspiration on mesenchymal stem cell (MSC) kinetics expressed as the total number of MSCs (**Fig. E-2A**) and as the cumulative population doubling (CPD) (**Fig. E-2B**). The expansion spanned six passages, each of which was performed when the cells were 70% to 80% confluent. Samples from all twenty-two subjects were analyzed and data are presented as the mean and the standard deviation. The anterior iliac crest (AIC) and posterior iliac crest (PIC) sites were equivalent in terms of total MSC count and proliferation capacity, with no significant differences between the two anatomic sites at any time point.

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TABLE E-1 Characteristics of the Donors

Donor	Age *(yr)*	Sex	Diagnosis
1	37	F	Angiosarcoma of the femur
2	20	M	Delayed union of femoral fracture
3	20	M	Humerus exostosis
4	18	M	Delayed union of tibial fracture
5	44	M	Delayed union of femoral fracture
6	18	M	Fibrous dysplasia
7	40	M	Osteonecrosis of the femoral head
8	43	M	Axillary lipoma
9	37	M	Revision of patellar components
10	33	M	Femoral pseudarthrosis
11	31	M	Osteonecrosis of the femoral head
12	25	M	Bone cyst of the femur
13	46	M	Osteonecrosis of the femoral head
14	52	F	Mobilization of hip arthroplasty
15	29	F	Osteonecrosis of the femoral head
16	25	F	Knee valgus
17	42	M	Coxarthrosis
18	43	M	Osteochondritis of the knee
19	36	M	Exostosis of the tibia
20	47	F	Delayed union of tibial fracture
21	72	F	Coxarthrosis of the hip
22	68	F	Arthrosis of the knee