

World Journal of *Clinical Cases*

World J Clin Cases 2021 November 16; 9(32): 9699-10051



REVIEW

- 9699 Emerging role of long noncoding RNAs in recurrent hepatocellular carcinoma
Fang Y, Yang Y, Li N, Zhang XL, Huang HF

MINIREVIEWS

- 9711 Current treatment strategies for patients with only peritoneal cytology positive stage IV gastric cancer
Bausys A, Gricius Z, Aniuksyte L, Luksta M, Bickaite K, Bausys R, Strupas K

ORIGINAL ARTICLE**Case Control Study**

- 9722 Botulinum toxin associated with fissurectomy and anoplasty for hypertonic chronic anal fissure: A case-control study
D'Orazio B, Geraci G, Famà F, Terranova G, Di Vita G
- 9731 Correlation between circulating endothelial cell level and acute respiratory distress syndrome in postoperative patients
Peng M, Yan QH, Gao Y, Zhang Z, Zhang Y, Wang YF, Wu HN

Retrospective Study

- 9741 Effects of early rehabilitation in improvement of paediatric burnt hands function
Zhou YQ, Zhou JY, Luo GX, Tan JL
- 9752 Intracortical screw insertion plus limited open reduction in treating type 31A3 irreducible intertrochanteric fractures in the elderly
Huang XW, Hong GQ, Zuo Q, Chen Q
- 9762 Treatment effects and periodontal status of chronic periodontitis after routine Er:YAG laser-assisted therapy
Gao YZ, Li Y, Chen SS, Feng B, Wang H, Wang Q
- 9770 Risk factors for occult metastasis detected by inflammation-based prognostic scores and tumor markers in biliary tract cancer
Hashimoto Y, Ajiki T, Yanagimoto H, Tsugawa D, Shinozaki K, Toyama H, Kido M, Fukumoto T
- 9783 Scapular bone grafting with allograft pin fixation for repair of bony Bankart lesions: A biomechanical study
Lu M, Li HP, Liu YJ, Shen XZ, Gao F, Hu B, Liu YF
- 9792 High-resolution computed tomography findings independently predict epidermal growth factor receptor mutation status in ground-glass nodular lung adenocarcinoma
Zhu P, Xu XJ, Zhang MM, Fan SF

- 9804** Colorectal cancer patients in a tertiary hospital in Indonesia: Prevalence of the younger population and associated factors

Makmun D, Simadibrata M, Abdullah M, Syam AF, Shatri H, Fauzi A, Renaldi K, Maulahela H, Utari AP, Pribadi RR, Muzellina VN, Nursyirwan SA

- 9815** Association between *Helicobacter pylori* infection and food-specific immunoglobulin G in Southwest China

Liu Y, Shuai P, Liu YP, Li DY

- 9825** Systemic immune inflammation index, ratio of lymphocytes to monocytes, lactate dehydrogenase and prognosis of diffuse large B-cell lymphoma patients

Wu XB, Hou SL, Liu H

Clinical Trials Study

- 9835** Evaluating the efficacy of endoscopic sphincterotomy on biliary-type sphincter of Oddi dysfunction: A retrospective clinical trial

Ren LK, Cai ZY, Ran X, Yang NH, Li XZ, Liu H, Wu CW, Zeng WY, Han M

Observational Study

- 9847** Management of pouch related symptoms in patients who underwent ileal pouch anal anastomosis surgery for adenomatous polyposis

Gilad O, Rosner G, Brazowski E, Kariv R, Gluck N, Strul H

- 9857** Presepsin as a biomarker for risk stratification for acute cholangitis in emergency department: A single-center study

Zhang HY, Lu ZQ, Wang GX, Xie MR, Li CS

Prospective Study

- 9869** Efficacy of Yiqi Jianpi anti-cancer prescription combined with chemotherapy in patients with colorectal cancer after operation

Li Z, Yin DF, Wang W, Zhang XW, Zhou LJ, Yang J

META-ANALYSIS

- 9878** Arthroplasty vs proximal femoral nails for unstable intertrochanteric femoral fractures in elderly patients: a systematic review and meta-analysis

Chen WH, Guo WX, Gao SH, Wei QS, Li ZQ, He W

CASE REPORT

- 9889** Synchronous multiple primary malignancies of the esophagus, stomach, and jejunum: A case report

Li Y, Ye LS, Hu B

- 9896** Idiopathic acute superior mesenteric venous thrombosis after renal transplantation: A case report

Zhang P, Li XJ, Guo RM, Hu KP, Xu SL, Liu B, Wang QL

- 9903** Next-generation sequencing technology for diagnosis and efficacy evaluation of a patient with visceral leishmaniasis: A case report

Lin ZN, Sun YC, Wang JP, Lai YL, Sheng LX

- 9911** Cerebral air embolism complicating transbronchial lung biopsy: A case report
Herout V, Brat K, Richter S, Cundrle Jr I
- 9917** Isolated synchronous Virchow lymph node metastasis of sigmoid cancer: A case report
Yang JQ, Shang L, Li LP, Jing HY, Dong KD, Jiao J, Ye CS, Ren HC, Xu QF, Huang P, Liu J
- 9926** Clinical presentation and management of drug-induced gingival overgrowth: A case series
Fang L, Tan BC
- 9935** Adult with mass burnt lime aspiration: A case report and literature review
Li XY, Hou HJ, Dai B, Tan W, Zhao HW
- 9942** Massive hemothorax due to intercostal arterial bleeding after percutaneous catheter removal in a multiple-trauma patient: A case report
Park C, Lee J
- 9948** Hemolymphangioma with multiple hemangiomas in liver of elderly woman with history of gynecological malignancy: A case report
Wang M, Liu HF, Zhang YZZ, Zou ZQ, Wu ZQ
- 9954** Rare location and drainage pattern of right pulmonary veins and aberrant right upper lobe bronchial branch: A case report
Wang FQ, Zhang R, Zhang HL, Mo YH, Zheng Y, Qiu GH, Wang Y
- 9960** Respiratory failure after scoliosis correction surgery in patients with Prader-Willi syndrome: Two case reports
Yoon JY, Park SH, Won YH
- 9970** Computed tomography-guided chemical renal sympathetic nerve modulation in the treatment of resistant hypertension: A case report
Luo G, Zhu JJ, Yao M, Xie KY
- 9977** Large focal nodular hyperplasia is unresponsive to arterial embolization: A case report
Ren H, Gao YJ, Ma XM, Zhou ST
- 9982** Fine-needle aspiration cytology of an intrathyroidal nodule diagnosed as squamous cell carcinoma: A case report
Yu JY, Zhang Y, Wang Z
- 9990** Extensive abdominal lymphangiomatosis involving the small bowel mesentery: A case report
Alhasan AS, Daqqaq TS
- 9997** Gastrointestinal symptoms as the first sign of chronic granulomatous disease in a neonate: A case report
Meng EY, Wang ZM, Lei B, Shang LH
- 10006** Screw penetration of the iliopsoas muscle causing late-onset pain after total hip arthroplasty: A case report
Park HS, Lee SH, Cho HM, Choi HB, Jo S

- 10013** Uretero-lumbar artery fistula: A case report
Chen JJ, Wang J, Zheng QG, Sun ZH, Li JC, Xu ZL, Huang XJ
- 10018** Rare mutation in *MKRN3* in two twin sisters with central precocious puberty: Two case reports
Jiang LQ, Zhou YQ, Yuan K, Zhu JF, Fang YL, Wang CL
- 10024** Primary mucosal-associated lymphoid tissue extranodal marginal zone lymphoma of the bladder from an imaging perspective: A case report
Jiang ZZ, Zheng YY, Hou CL, Liu XT
- 10033** Focal intramural hematoma as a potential pitfall for iatrogenic aortic dissection during subclavian artery stenting: A case report
Zhang Y, Wang JW, Jin G, Liang B, Li X, Yang YT, Zhan QL
- 10040** Ventricular tachycardia originating from the His bundle: A case report
Zhang LY, Dong SJ, Yu HJ, Chu YJ
- 10046** Posthepatectomy jaundice induced by paroxysmal nocturnal hemoglobinuria: A case report
Liang HY, Xie XD, Jing GX, Wang M, Yu Y, Cui JF

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Screw penetration of the iliopsoas muscle causing late-onset pain after total hip arthroplasty: A case report

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Abstract

BACKGROUND

Postoperative pain following total hip arthroplasty (THA) may occur in a few patients but may pose a significant challenge to surgeons if the etiology is not identified. Herein, we report the case of a patient who developed late-onset pain following THA due to screw penetration of the iliopsoas tendon.

CASE SUMMARY

We report the case of a 77-year-old man who developed inguinal pain 7 years after THA. While the symptoms resembled that of iliopsoas impingement by the acetabular cup, the pain resolved only when the supplementary acetabular screw protruding through the ilium was decompressed. Decompression was performed using the para-rectus approach. The patient was able to ambulate pain-free immediately after surgery.

CONCLUSION

A protruded screw through the ilium may penetrate the iliopsoas muscle, causing pain following THA. Pain may resolve with the decompression of the protruded screw.

Key Words: Acetabular cup; Iliopsoas impingement; Para-rectus approach; Screw penetration; Total hip arthroplasty; Case report

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Core Tip: The acetabular screws are mostly positioned in the posterolateral quadrant

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and rarely protrude through the anterior ilium. However, when supplementary screw is protruded anteriorly and penetrate through iliopsoas muscle, the symptom may resemble that of the iliopsoas impingement by acetabular cup. Instead of removing the entire screw, which would require dislocation of the hip and disassembly of the ceramic liner, flatten the protruded portion of the screw with the para-rectus approach may relieve the symptom.

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INTRODUCTION

Primary total hip arthroplasty (THA) is recognized as a safe and satisfactory intervention; however, postoperative pain may occur in some patients. Pain may be attributed to various etiologies, including periprosthetic infection, implant loosening, or irritation from various causes¹. Conversely, several patients develop pain after THA due to unidentified reasons. These patients may undergo extensive spine evaluation or psychological assessment, and in some cases, the pain may require revision surgery even when mechanical complications of the prosthesis are not confirmed^[2]. Herein, we report a case in which a supplemental screw on the acetabular cup initiated iliopsoas irritation. We suggest that this may be a potential cause of late-onset pain in patients who undergo THA.

CASE PRESENTATION

Chief complaints

A 77-year-old man was referred to our institution because of right inguinal pain.

History of present illness

The patient's symptoms developed a month ago without any trauma to the hip joint. The pain worsened over 1 mo before the patient decided to visit our clinic.

History of past illness

The patient did not have any relevant past illness since the index THA was performed.

Personal and family history

The patient had undergone THA due to post-traumatic osteoarthritis 7 years prior and had no discomfort following the surgery. The index surgery was performed using a direct lateral (modified Hardinge) approach with a non-cemented prosthesis (Delta PF cup, C2 stem; Lima, Italy) and ceramic-on-ceramic bearings and two supplementary screws were used for fixation of the acetabular cup.

Physical examination

At the time of the visit, the patient was unable to walk because of pain, with a visual analog scale (VAS) score of 9. The pain was localized in the inguinal region with mild tenderness at the site, which was exacerbated by hip extension.

Laboratory examinations

All results from routine laboratory tests, which included serum erythrocyte sedimentation rate and C-reactive protein levels for the detection of periprosthetic infection, were within the normal range.

Imaging examinations

The immediate postoperative radiograph following the index THA was compared

with a simple radiograph taken at the time of the visit. On the femoral side, bone resorption in the Charnley and Gruen zones[3,4] 1 and 7 were observed, and in the acetabular side, slight bone resorption was observed in zone 2 (Figure 1). A bone scan with WBC-marrow imaging showed no evidence of infection[5]. Thorough lumbar spine inspection, including magnetic resonance imaging (MRI), showed mild disc bulging at L4-5. On sonography of the hip joint, no joint fluid was observed near the prosthesis; however, a slight protrusion of the anterior rim of the acetabular cup was observed. The cup was placed at 39° of abduction, and the anteversion was - 9° (Figure 2).

Initial diagnosis, treatment, and prognosis

While low-grade infection was suspected, psoas impingement due to acetabular retroversion was suggested to be a potential cause of pain. Ultrasound-guided injection of an analgesic was performed at the insertion of the iliopsoas tendon (IPT), and the pain subsided immediately. With the given information, the diagnosis of iliopsoas impingement due to the acetabular cup was established. The patient underwent 3 mo of conservative treatment without improvement, and the decision to perform arthroscopic iliopsoas release was made.

Arthroscopic iliopsoas release was performed using the established method[6] using the anterolateral and mid-anterior portals. Before fluid was loaded into the joint, capsule samples were retrieved for tissue culture, which later confirmed the absence of bacteria. During surgery, thickening of the anterior capsule was observed, which was decompressed along with the tendinous portion of the IPT. The patient's pain improved to VAS 2 after the surgery; pain during walking persisted but was endurable. The patient was followed up at 3-mo intervals, with the pain persisting and ranging between VAS 2 and 3.

Fourteen months after the surgery, the patient developed the same pain that occurred prior to the iliopsoas release surgery. The patient was unable to walk, and the range of motion of the hip was unattainable due to pain. The patient's pain was limited to the inguinal region but also somehow radiated to the anterior thigh.

Further diagnostic work-up

The simple radiograph showed no difference from the radiograph taken at the time of the first visit to our institution; again, there was no sign of infection. Ultrasound-guided injection of an analgesic to the IPT again resulted in complete resolution of pain for 2 days. At this time, Computed tomography (CT) with three-dimensional reconstruction and MRI with a metal suppression sequence were performed. CT revealed that the tip of the screw used for the acetabular cup fixation protruded out of the anterior ilium. The MRI revealed fluid collection in the iliopsoas muscle adjacent to the screw tip (Figure 3).

FINAL DIAGNOSIS

We concluded that the patient's inguinal pain was due to iliopsoas muscle penetration by the screw.

TREATMENT

Instead of removing the entire screw, which would require dislocation of the hip and disassembly of the ceramic liner, we decided to flatten the protruded portion of the screw. The pararectus approach[7] was used for exposure. On exploration of the iliopsoas, we observed a hematoma where the screw tip protruded. Tissue culture was performed to differentiate potential infections and was found to be negative. The protruded tip of the screw was approximately 1.8 mm long and was flattened to the ilium surface using a high-speed burr (Legend Diamond ball burr; Medtronic, United States; Figure 4).

OUTCOME AND FOLLOW-UP

Complete resection of the protruded screw tip was observed on postoperative radiographs (Figure 5). The pain completely subsided when the patient recovered

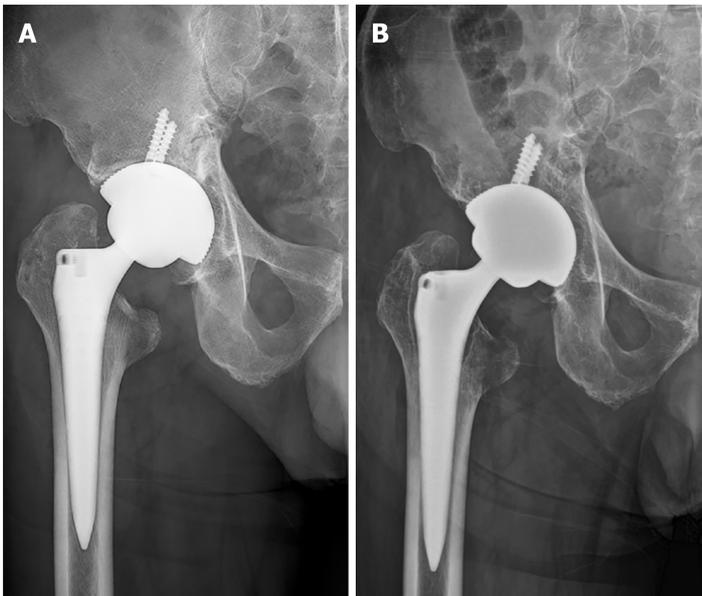


Figure 1 Anterolateral pelvis radiographs of the case. A: Immediately following the index total hip arthroplasty; B: At the time of initial visit to our institution.

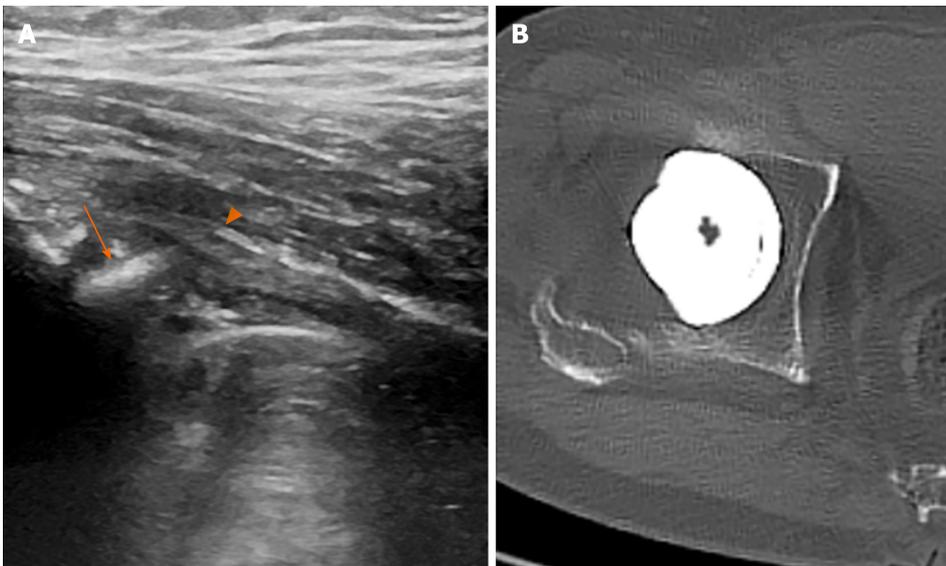


Figure 2 Images showing potential iliopsoas impingement by the cup. A: Ultrasonography demonstrating a protruded acetabular rim (arrow) in approximation to the iliopsoas tendon (arrow head); B: Axial computed tomography scan showing a retroverted cup by 9°.

from general anesthesia, and the patient was able to walk pain-free the next day. The patient was followed up for a year without pain and no radiographic changes.

DISCUSSION

The results of THA are mostly satisfactory, and surgical interventions are often without complications. However, pain may persist in some patients for various reasons. The cause of the pain may be unidentified in a limited number of patients.

More recently, iliopsoas impingement has been suggested as a potential cause of postoperative pain and has been reported to occur in up to 4.3% of patients undergoing THA[8]. This impingement is suggested to be caused by a retroverted or large acetabular cup[9]. The acetabular cup was retroverted by 9 in our case, and since the patient's pain improved following the iliopsoas injection, we initially suspected iliopsoas impingement from cup malposition. It is likely that our analgesic injection to the IPT may have spread along the IPT and may have anesthetized the muscular

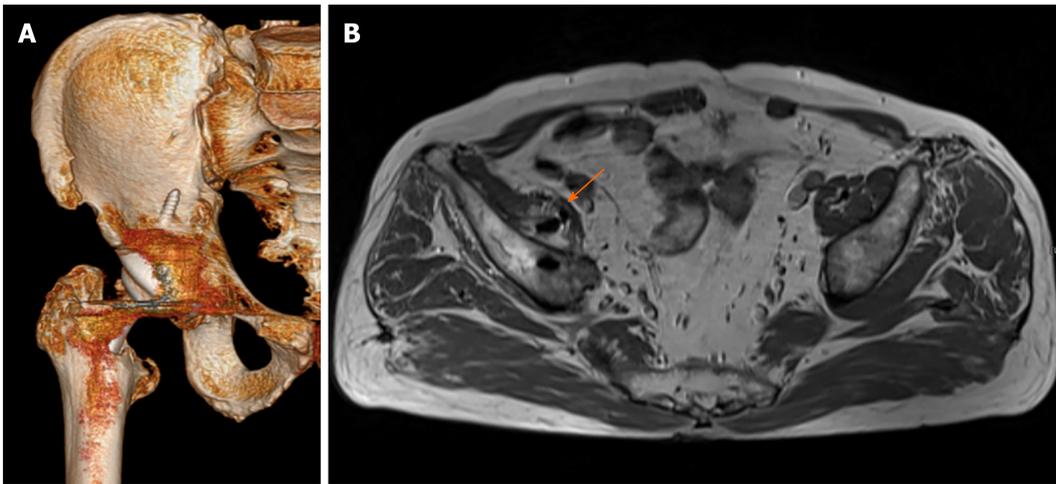


Figure 3 Advance images showing screw protrusion. A: Three-dimensional reconstruction of a computed tomography image showing the screw penetrating through the ilium; B: Magnetic resonance imaging showing the screw penetrating through the iliopsoas muscle (arrow).

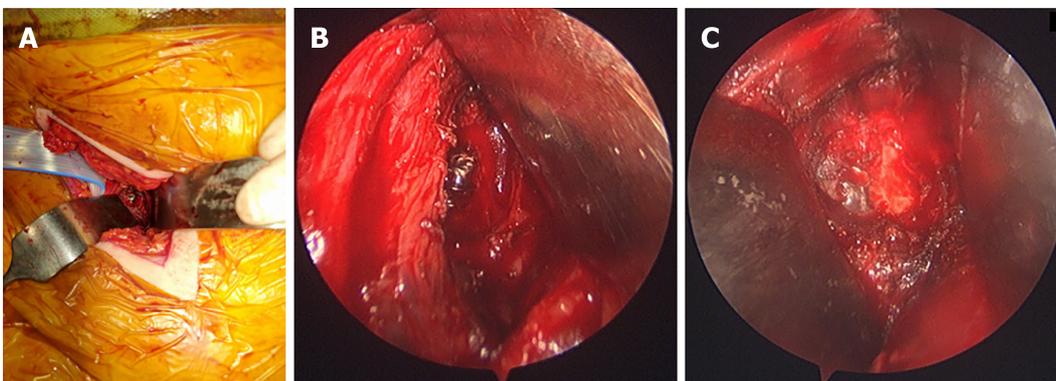


Figure 4 Clinical photos from surgical intervention. A: Exposure of the screw using the pararectus approach; B: Close-up look of the protruding screw; C: Following flattening of the screw.



Figure 5 Immediate postoperative radiographs. A: Showing the flattened screw tip (arrow); B: Complete resection of the screw (as compare to Figure 3B).

portion in which the screw was penetrating. Similarly, arthroscopic release of the IPT may have elongated the tendon, causing less stress to the muscle, resulting in decreased but persistent pain.

Reports of iliopsoas impingement by supplementary acetabular screws are extremely rare. The acetabular screws are mostly positioned in the posterolateral quadrant and rarely protrude through the anterior ilium[10]. The anteriorly placed acetabular screw may pass proximal to the external iliac vessels and should be avoided

if possible. However, even when it protrudes in this region, it is often not taken seriously and is not considered a cause of pain. However, iliopsoas travels adjacent to the ilium, and if the screw is long enough, this may result in irritation of the iliopsoas muscle.

To the best of our knowledge, there is one case report that reported a similar phenomenon. Mayne *et al*[11] reported a single case wherein a screw resulted in iliopsoas tendinitis. The pain started 3 wk after THA, and after 13 mo of follow-up, MRI revealed inflammation of the iliopsoas muscle. The authors performed revision screw removal and liner exchange to resolve this problem.

The current case varies from the previous report in that late-onset pain following THA occurred due to an acetabular screw. It remains unknown why the pain did not begin immediately following surgery and started after 7 years. One assumption would be the patient's change in the spinopelvic alignment; that is, if the patient developed pelvic anteversion, this may tighten the iliopsoas, making it more prone to irritation from the screw[12]. However, this theory remains unproven. Additionally, we could resolve the problem by simple decompression using the pararectus approach, which provides early ambulation and less economic burden for the patient. We believe this is the first case report that suggests that a supplementary screw penetrating the iliopsoas muscle may cause late-onset pain.

CONCLUSION

A supplementary screw penetrating the iliopsoas muscle after THA may cause late-onset pain. With advancements in surgical techniques, the problem can be solved simply by using the pararectus approach. We recommend using advanced imaging to confirm the relationship between the screw and iliopsoas muscle when the pain is unexplainable.

REFERENCES

- 1 **Henderson RA**, Lachiewicz PF. Groin pain after replacement of the hip: aetiology, evaluation and treatment. *J Bone Joint Surg Br* 2012; **94**: 145-151 [PMID: 22323676 DOI: 10.1302/0301-620X.94B2.27736]
- 2 **Classen T**, Zaps D, Landgraeber S, Li X, Jäger M. Assessment and management of chronic pain in patients with stable total hip arthroplasty. *Int Orthop* 2013; **37**: 1-7 [PMID: 23180100 DOI: 10.1007/s00264-012-1711-6]
- 3 **Banaszkiewicz PA**. "Modes of failure" of cemented stem-type femoral components: a radiographic analysis of loosening. In: *Classic Papers in Orthopaedics*. Springer, 2014: 35-38 [DOI: 10.1007/978-1-4471-5451-8_8]
- 4 **Banaszkiewicz PA**. *Classic Papers in Orthopaedics*. In: *Radiological demarcation of cemented sockets in total hip replacement*. Springer, 2014: 39-41 [DOI: 10.1007/978-1-4471-5451-8_9]
- 5 **Palestro CJ**, Love C, Tronco GG, Tomas MB, Rini JN. Combined labeled leukocyte and technetium 99m sulfur colloid bone marrow imaging for diagnosing musculoskeletal infection. *Radiographics* 2006; **26**: 859-870 [PMID: 16702459 DOI: 10.1148/rg.263055139]
- 6 **May O**. Arthroscopic techniques for treating ilio-psoas tendinopathy after hip arthroplasty. *Orthop Traumatol Surg Res* 2019; **105**: S177-S185 [PMID: 30555016 DOI: 10.1016/j.otsr.2018.05.017]
- 7 **Keel MJ**, Ecker TM, Cullmann JL, Bergmann M, Bonel HM, Büchler L, Siebenrock KA, Bastian JD. The Pararectus approach for anterior intrapelvic management of acetabular fractures: an anatomical study and clinical evaluation. *J Bone Joint Surg Br* 2012; **94**: 405-411 [PMID: 22371551 DOI: 10.1302/0301-620X.94B3.27801]
- 8 **Dora C**, Houweling M, Koch P, Sierra RJ. Iliopsoas impingement after total hip replacement: the results of non-operative management, tenotomy or acetabular revision. *J Bone Joint Surg Br* 2007; **89**: 1031-1035 [PMID: 17785740 DOI: 10.1302/0301-620X.89B8.19208]
- 9 **Batailler C**, Bonin N, M Wettstein, Nogier A, Martres S, Ollier E, May O, Lustig S; French Arthroscopy Society (SFA). Outcomes of cup revision for ilio-psoas impingement after total hip arthroplasty: Retrospective study of 46 patients. *Orthop Traumatol Surg Res* 2017; **103**: 1147-1153 [PMID: 28951281 DOI: 10.1016/j.otsr.2017.07.021]
- 10 **Wasielewski RC**, Cooperstein LA, Kruger MP, Rubash HE. Acetabular anatomy and the transacetabular fixation of screws in total hip arthroplasty. *J Bone Joint Surg Am* 1990; **72**: 501-508 [PMID: 2324135]
- 11 **Mayne IP**, Kosashvili Y, White LM, Backstein D. Iliopsoas tendonitis due to the protrusion of an acetabular component fixation screw after total hip arthroplasty. *J Arthroplasty* 2010; **25**: 659.e5-659.e8 [PMID: 19303738 DOI: 10.1016/j.arth.2009.02.019]
- 12 **Asai H**, Tsuchiyama H, Hatakeyama T, Inaoka PT, Murata K. Age-related Changes in Maximum

Pelvic Anteversion and Retroversion Angles Measured in the Sitting Position. *J Phys Ther Sci* 2014;
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