ABSTRACT

Purpose. To compare early outcome after total knee arthroplasty (TKA) in women with a positive or negative urine culture.

Methods. 128 women underwent bilateral (n=89) or unilateral (n=39) primary TKA. Diabetes mellitus was present in 38%, obesity in 53%, and asymptomatic urinary tract infection (positive urine culture) in 36% of women. Women with a positive or negative urine culture were compared.

Results. In the 46 women with a positive urine culture, Escherichia coli (n=29) and Klebsiella (n=17) were grown. Women with a positive or negative urine culture were comparable in terms of the incidence of diabetes (28% vs. 43%, p=0.1), obesity (52% vs. 54%, p=0.87), fever (9% vs. 15%, p=0.32), leucocytosis (28% vs. 17%, p=0.13), and delayed wound healing (0% vs. 1%, p=0.45).

Conclusion. Women with or without a positive urine culture had comparable early complication rates following TKA.

INTRODUCTION

Patients with comorbidities (diabetes mellitus, obesity, urinary tract infection, hypertension, coronary artery disease) are more likely to develop early and late complications following total knee arthroplasty (TKA). Infection is a major reason for implant removal and revision arthroplasty; although its incidence is <1%. Postoperative haematogenous seeding from the urinary tract increases patient morbidity. Women account for 80% of TKA patients, and obese diabetic elderly women are more likely to have urinary tract infection. This study compared the early outcome following TKA in women with a positive or negative urine culture.

MATERIALS AND METHODS

A sample size of at least 128 was needed to attain
a significance level of 0.05, a size effect of 0.5, and a statistical power of 0.8. Between June 2012 and November 2012, 128 women underwent bilateral (n=89) or unilateral (n=39) primary TKA. Patients with symptomatic urinary tract infection and uncontrolled diabetes were excluded. Diabetes mellitus was present in 38%, obesity (body mass index >30) in 53%, and asymptomatic urinary tract infection (positive urine culture) in 36% of women.

A midstream clean-catch urine sample was collected one day prior to surgery. Intravenous antibiotics were commenced one hour prior to surgery and continued as per hospital protocol. Fever was defined as a body temperature of >100°F. Leucocytosis was defined as a total leucocyte count of >11 000/mm³.

Patients with a positive or negative urine culture were compared using the Chi squared test. A p value of <0.05 was considered statistically significant.

RESULTS

In the 46 patients with a positive urine culture, Escherichia coli (n=29) and Klebsiella (n=17) were grown. Patients with a positive or negative urine culture were comparable in terms of the incidence of diabetes (28% vs. 43%, p=0.1), obesity (52% vs. 54%, p=0.87), fever (9% vs. 15%, p=0.32), leucocytosis (28% vs. 17%, p=0.13), and delayed wound healing (0% vs. 1%, p=0.45) [Table].

DISCUSSION

Asymptomatic urinary tract infection is common in obese diabetic elderly women; women with urinary tract infection are often asymptomatic, with no dysuria, urgency, or frequency. Total joint arthroplasty should be performed if bacteriuria is asymptomatic but postponed when there are irritative symptoms and evidence of leucocytosis. Workup for sepsis is not indicated unless corroborating signs and symptoms are present. Early postoperative pyrexia is a normal physiological response; a significant pyrexia can be predicted by a drop in the haematocrit level and following blood transfusion. Asymptomatic urinary tract infection in elderly women may be indicative of poor physiological status (rather than the risk of infection) and should not be a contraindication to TKA.

One limitation of this study was the short follow-up (6 weeks). It is not known if asymptomatic urinary tract infection had any affect on late complications.

CONCLUSION

Women with or without a positive urine culture had comparable early complication rates following TKA.

DISCLOSURE

No conflicts of interest were declared by the authors.

REFERENCES