INPLASY PROTOCOL

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None declared.

Effects of different surgical timing on postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome：a protocol for systematic review and meta-analysis

Weng, Y[1]; Li, J[2]; Li, L[3]; Zhong, Y[4].

Review question / Objective: **The aim of the study was to assess the effect of surgical timing on postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome.**
Condition being studied: **Cauda equina syndrome (CES) is a type of clinical syndrome characterized by saddle-region sensation, sphincter function and sexual dysfunction caused by cauda equina nerve compression,some patients are also complicated with sciatica, sensory and motor dysfunction of both lower limbs.The most common cause of it is the compression of the cauda equina nerve caused by a herniated lumbar disc.More than 95% of uncomplicated herniated lumbar discs can be treated conservatively initially, with surgery reserved for patients who experience worsening of neurologic symptoms or failure to clinically improve after an appropriate conservative trial. But, however, when it progresses to CES, surgery treatment is necessary.Most investigators have recommended emergent surgical decompression for CES; however, results in certain studies have been cited to indicate that delayed surgery may also provide satisfactory outcomes.Among the symptoms CES may causes, urinary incontinence and rectal dysfunction must be the most embarrassing and inconvenient syndromes.So we decide to assess that whether the surgical timing could impact the postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 March 2021 and was last updated on 06 March 2021 (registration number INPLASY202130016).

INTRODUCTION

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syndrome characterized by saddle-region sensation, sphincter function and sexual dysfunction caused by cauda equina nerve compression,some patients are also complicated with sciatica, sensory and motor dysfunction of both lower limbs.The most common cause of it is the compression of the cauda equina nerve caused by a herniated lumbar disc.More than 95% of uncomplicated herniated lumbar discs can be treated conservatively initially, with surgery reserved for patients who experience worsening of neurologic symptoms or failure to clinically improve after an appropriate conservative trial. But, however, when it progresses to CES, surgery treatment is necessary.Most investigators have recommended emergent surgical decompression for CES; however, results in certain studies have been cited to indicate that delayed surgery may also provide satisfactory outcomes.Among the symptoms CES may causes, urinary incontinence and rectal dysfunction must be the most embarrassing and inconvenient syndromes.So we decide to assess that whether the surgical timing could impact the postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome.

METHODS

Participant or population: Patients with cauda equina syndrome who have undergone surgery

Intervention: Observational research without intervention.

Comparator: Patients who have recovered after surgery among the selected literature.

Study designs to be included: Prospective and retrospective cohort studies and case-control study.

Eligibility criteria: 1.Literature inclusion criteria: Study type: Observational study that can extract the number of cases of urinary incontinence and rectal dysfunction caused by cauda equina syndrome and the record of the time between symptom onset and surgery. Observational study that assessed the effect of surgical timing on postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome. Research population: The diagnosis of urinary incontinence and rectal dysfunction caused by cauda equina syndrome is clear in the studies; English language. 2.Exclusion criteria: Duplicate literature; reviews, conferences, animal experiments; no clear report on the number of cases with urinary incontinence and rectal dysfunction caused by cauda equina syndrome; no clear record of the time between symptom onset and surgery; inconsistent research content.

Information sources: A systematic literature search will be conducted in PubMed and Web of science with combinations of the following keywords:surgery and cauda equina syndrome. The references of related studies will also be screened to identified potentially relevant studies.

Main outcome(s): The effect of surgical timing on postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome.

Additional outcome(s): The degree of postoperative recovery is related to the severity of preoperative symptoms.

Quality assessment / Risk of bias analysis: The Newcastle-Ottawa Scale (NOS) will be used to assess the quality of included case control studies.

Strategy of data synthesis: The effect of surgical timing on postoperative recovery of urinary incontinence and rectal dysfunction in patients with cauda equina syndrome will be analyzed .OR and 95% percent CI will be calculated and P value less than 0.05 will be considered as statistically significant. The heterogeneity among included studies will be assessed by the I2 statistic. The random effects model will be used if the heterogeneity is high (I2>50% or p<0.1), otherwise fixed effect model will be used. The publication

bias will be assessed by Egger's test. Statistical analyses will be performed using STATA software (version 15.1, StataCorp, College Station, US).

Subgroup analysis: When the heterogeneity is large, perform a subgroup analysis to explore the source of the heterogeneity. The subgroup analysis includes: sample size, patient source, age and the severity of the preoperative symptoms.

Sensitivity analysis: Sensitivity analysis of the literature included in the meta-analysis. If the results of each study are within the overall confidence interval, the meta-analysis results are stable.

Language: English.

Country(ies) involved: China.

Keywords: Surgery;urinary incontinence; rectal dysfunction; cauda equina syndrome.

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