

Anterior cervical decompression and fusion using cage and autogenously graft.

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الخلاصة

م ا ج راء عمليّة رفّ ع الات زلاق الغض روفي العنق ي م ن الناحية الامامية علاج اللاند زلاق الغض روفي العنق ي وت م اسد تبدال الغض روف المرّف وع بغض روف ص ناعي م مع اسد تعمال عظم طبيعي اخذ من عظم الورك لنفس الشخصقم، اعتمد اد الاعراض التي يشكو منها المريض مع طرق التشخيص المساعدة مثل أشعة بيج الرنين المغناطيسي للفقرات العنقية تم معالجه أربعة أشخاص (10%) منهم كانوا يعانون من الانزلاق الغضروفي بين الفقرات العنقية الرابعة والخامسة (5%) لاق بين الفقرات الخامسة والسادسة و(25%) زلاق بين الفقرات السادسة والسابعة تم رفّ ع الات زلاق الغض روفي م ن الناحية الامامية لـ (38) مريض اجريت عملية رفع الفقرة الخامسة والسلسلة لمريض واحد فقط كانت نتيجة تحسن الاعراض لدى المرضى (80%) بينما كان تحسن في الاعراض ولكن بصرة جزئية (17,5%) وع دم وجود أي تغير أو تحسن في الحالة الصحية في (2,5%) فقط.

توصلت الدراسات بضرورة تثبيت العمود الفقري للفقرات العنقية بأستعمال الفقرات الصناعية مع العظم للوصول إلى أحسن النتائج.

Abstract

Aim: Use of cage and bone graft for decompression and fixation cervical spine

Methods: Fourty patients between june 2004 _ june 2006 , evaluated by physical and neurological examination with radiography by x Ray and MRI . the treated by anterior disectomy and replaced by cage and bone graft.

Results: Regarding the site of disc prolapsed (10%) between C4 - 5(65%) between C5 -6 and (25%) between C6-7 .

37 patients treated disectomy by and bone graft while two

Patient treated by corpectomy of C5,6 body

The complete recovery presented in 80% , incomplete recovery in 7,5% while no any improvement in 2,5%

Conclusion: Immediate stability with good clinical improvement and no graft morbidity are the advantage of this implant compared to conventional interbody grafting techniques .

Key words: Cervical disc prolapse, cervical cage, bone graft neurosurgical surgeon.

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Introduction

Cervical disc degeneration can lead to both a herniated disc and spondylotic changes: these lesions can damage the spinal cord and its roots. (1).

The disc between C5-C6 and that between C6-C7 are those most frequent affected, art of gelatinous nucleus pulposus protrudes through the annulus fibrosus at its weakest part, which is posterolateral; or part of the annulus itself may be displaced, if slight protrusion causing localized pain in the neck but if large the protrusion herniated through the ligament and may immigrate upon the nerve leading to ridiculer pain or occasionally upon spinal cord itself if it is central prolapsed. (2, 3, 4)

Materials and methods

This is a prospective study conducted on 40 patients treated between June 2004-june2006 and evaluated by detailed history, physical examination and neurological assessment and by radiological examination.

The history taken placed upon age, sex, occupation, type and degree of physical activity, precipitating factors history of trauma, the site of pain , duration , radiation , severity, aggravating or reliving features.

Neurological symptoms including parasthesia, muscle weakness sphincteric trouble.History of headache, dizziness, previous medication and other types of treatment.Radiological examination by plain X-ray of cervical spine both AP and lateral view and MRI and MR myelography study.

Operative technique

The patient is anesthetized in the supine position with cervical lordosis in maintained by rolled towel placed beneath the neck.

The head rotated slightly to the side opposite that planned for the skin incision, after transaction of the platysma fibers, The carotid sheath retracted laterally by finger dissection the trachea and esophagus mobilized medially. The prevertebral fascia is incised in the midline exposing anterior longitudinal ligament. A spinal needle inserted into one of exposed discs is useful. Radiopaque marker. Disc prolapsed removed and anterior and posterior osteophyte removed gently by curate.

Vertebral spreader applied in the body by the vertebra below and above disc space and totally curettage the disc space done. Cage with bone graft applied then skin sutured after good haemostasis. (4)

Results

40 patients with clinical and radiological evidence of cervical disc prolapsed were included in this series.32 male, and 8 female, the age of our patients ranged from 39-75 years with average (48.2) years. Table (1) and table (2).

Table(1) Sex distribution

Sex	No	%
Male	32	80%
Female	8	20%

Table (2) age distribution

Age (years)	No	%
39 - 50	26	65%
50 - 60	12	30%
> 60	2	5%

Occupation

The highest incidence of cervical disc prolapse seen in patients with heavy manual work for male (32 patients), while the female all was housewives and an with in job with heavy work also (8 patients).

Duration of symptoms

The duration of symptoms in this series averaged from 4 – months to 6 years

Table (3) Duration of symptoms

Duration of symptoms	No of cases	%
< 6 months	6	15%
6 months-1year	12	30%
1 -2 years	16	40%
2 -5 years	4	10%
>5 years	2	5%

Presenting symptoms

Neck pain and radicular pain was the presenting in 40 cases (100%), Parasthesia in 28 patients (72.5%) while the weakness in upper and lower limbs in (2.5%). Table (4) and table (5).

Table (4) Site of pain

Site of pain	No of patients	%
Right upper limb	20	50%
Left upper limb	16	40%
Both upper limbs	4	10%
	40	100%

Table (5) Localization of pain

Localization of the pain	No of patients	%
Right upper limb	12	30%
Left upper limb	10	25%
Both upper limbs	6	15%
	28	70%

Neurological deficit

Clinically detectable neurological deficit was elicited in 12 patients, 30% a part of sensory deficit which was elicited by demonstrating impaired sensation to the light touch, pin prick, vibration, deep and position sensation while one patient presented with spastic incomplete quadriplegia with muscle weakness but controlled both urine and bowel.

Associated symptoms such as dizziness, blurring vision, vertigo, unsteadiness seen in 2 patients.

Radiological presentation

Plain and MRI and MR myelography were taken for all patients. The disease in intervertebral disc space which was the commonest abnormality, while the loss of normal cervical lordosis with straightening in 26 cases (65%).

The cervical disc relapsed level seen in (table 6).

Table (6)vertebral level

Cervical level	No of patients	%
C 4-5	4	10%
C 5-6	26	65%
C 6-7	10	25%

The single level disc prolapse seen in 30 parent (75%) while the multiple disc prolapse 2-3 levels seen in 10 patients (25%).

Result of operative treatment

In 40 patients treated by anterior interbody fusion in 38 patients cage applied while 2 patient just graft applied for multiple corpectomy of C56 body. Complete pain relief seen in 32 patients (80%) incomplete relief in 6 patient (10%) but it relived with medication and physiotherapy. Parasthesia relived in 28 patients (70%) while non improvement seen in one patient (5%) (table7)

Table (7)Result of surgery

Result of surgery	No. patients	%
Complete recovery	32	80%
Incomplete recovery	7	17.5%
No improvement	1	2.5%

Complication occurred in one patient (2.5%)who presented preoperatively with incomplete quadriplegia he ends with complete quadriplegia.

Discussion

Cervical disc prolapsed and spondylosis is the most common disorder of the cervical spine it affects all peoples, but to vary degrees (6, 7).

The age of our patients ranged from 39 -75 years, with an average (48.2 years) the cervical prolapsed increased with age (65%) in forth decade it has been found that histochemical change make first appearance in this decade

And the nucleous pulposus show considerable structural changes with aging (8).

The high incidence of clinical disc prolapsed in heavy manual work and inadequate musculature and faulty with vigorous movement of the neck, which seem in male more than female.

The most common presenting symptom was the pain and radiculopathy which seem in all patients (100%) in this series ,in comparable to the finding in other series kitano et al.1993 suggested a biochemical changes _ acidic material stimulate nerve ending at annulus, posterior longitudinal ligament, dura and nerve root it self (9).

Northfield suggested the widespread distribution of pain has been ascribed to compression of brachial plexus secondary to scalenus anterior muscle spasm or it may be due to traction on the plexus roots caused by dropping of the shoulder due to muscle atrophy (5, 6, 10, 11).

The physical examination findings

The most our patient were in relative good general condition the majority of cases show some degree of limitation of neck movement to pain and muscle spasm, extension is often most painful maneuver which was found in 32 patients (80%).

Feeling of numbness was reported in 70% of cases detectable sensory deficit was elicited in 30 % this comparable to other studies (7, 8, 10,12,13,14,15).

Sensory loss to objective testing is uncertain, and there is dissociation feeling probably because we were not so pries in performing the test, or the patients misunderstand what we are looking for.

Spastic gait with other evidence of myelopathy was found in 1 patient this due to both motor and sensory long tracts involvement. Radiological examination plain x-ray and MRI done for all patients the majority of cases showed decrease I.V disc space and 18 patients (90%)

As in other studies (7,10,16,17,18) associated with straightening of cervical spine. In 26 patients (65%) there is evidence of subluxation, end plate sclerosis, vertebral fusion and deformity.

All patients treated by anterior interbody fusion with using bone graft from iliac crest, 38patients. (95%)cage applied after discectomy. Single level applied for 30 patients (75%)and 2 cages applied for 8 patients (20%)while 2 patient (5%) have multiple level with subluxation treated by corpectomy and one piece bone graft.

An oblique incision had been utilized because it is extensile and error in the level can easily be rectified, although it will render a less cosmetically pleasing scar.(8)

The right side was chosen for 38 patients while 2 patients left side was chosen because the disc prolapsed to intervertebral foramina which are difficult to deal with from the right side.

Neurological complication in form of complete quadriplegia was countered in one case who is the most elderly patient in age (75y) and other patient in form of increase pain and parasthesia radicular pattern of (C6 dermatome) persist for one year after surgery. Good fusion detected by followed patients with x-rays 1-3-6-12 months and there is no subluxation. No instability no cage migration, no kyphosis, no pseudoarthrosis.

Conclusions

Cervical disc prolapsed common in age of fourth decade, the highest incidence in person with heavy manual work, the most cases presented with history of more than one year periodic. Radiological evaluation by plain X-ray and MRI; there is decrease I.V disc space with dehydration in the disc material with prolapsed and compressing either the cervical roots or spinal cord.

All patients treated conservatively with analgesia, SAID steroid physiotherapy, collar it get not benefit before surgery.

Anterior interbody fusion with cage performed for 38 patients, 30 patients single cages while 8 patients applied 2 cages. And 2 patients just bone graft after corpectomy.

Immediate stability with good clinical response and no graft morbidity are the advantage of this implant compared to conventional interbody grafting techniques.

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