ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 10 | October - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A RETROSPECTIVE STUDY OF SPECTRUM OF SPINAL DYSRAPHISMS AND IT'S SURGICAL OUTCOME

Neurosurgery

Dr. D. Sampath Kumar 3rd Yr Neurosurgery Resident Gmkmch Salem

Dr. Prof.L.Sankar HOD

ABSTRACT

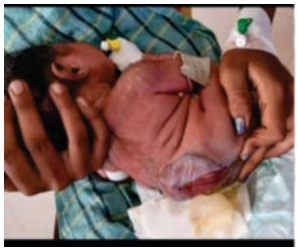
Spinal dysraphism spectrum includes meningocele, mylomeningocele, lipomeningmylocele, diastometamyelia, tethered cord syndrome, Early recognitions of these entities is important, become neurological function may be prescribed by early and appropriate surgical intervention This study aimed to evaluate the incidence, clinical presentations, surgical outcome in spinal dysraphism patients

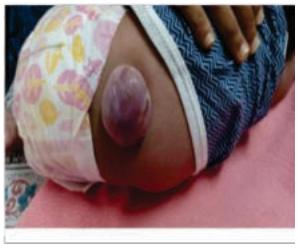
KEYWORDS

Spinal Dysraphism, and Myelomeningocele

INTRODUCTION

- Spinal dysraphism refers to a spectrum of congenital anomalies of the spine resulting in a defective neural arch through which meninges and / or neural elements herniated leading to a variety of clinical manifestations. They are divided in to aperta (visible lesions) and occulta (with no visible external lesion).





- Disorders of primary neurulation are responsible for the various forms of open dysraphism
- Disorders of secondary neurulation are responsible for the various forms of closed spinal dysraphism.
- The spectrum includes meningocele, mylomeningocele, lipomeningmylocele, diastometamyelia, tethered cord syndrome, and others.
- Early recognitions of these entities is important, become neurological function may be prescribed by early and appropriate surgical intervention.
- This study aimed to evaluate the incidence, clinical presentations, surgical outcome in spinal dysraphism patientsMaterials and methods
- This study was a retrospective study which consisted of 32 patients conducted in GOVT MOHANA KUMARA MANGALA MEDICAL COLLEGE SALEM FROM JANUAURY 2021 TO JANUAURY 2023
- All the patients were admitted in Department of PEDIATRICS & NEUROSURGERY
- All patients were evaluated for their complete history, presenting symptoms and examination of neurological. All patients were made to undergo cranio-spinal MRI, radiological findings and associated anomalies were recorded.
- All the patients underwent surgical procedures like repair and excision of the sac, cord detethering and ventriculoperitoneal shunt.
- These patients were followed in post-operative period and the outcomes were recorded. In the analysis, the patients who were followed up for 4 months minimum were included

Inclusion criteria

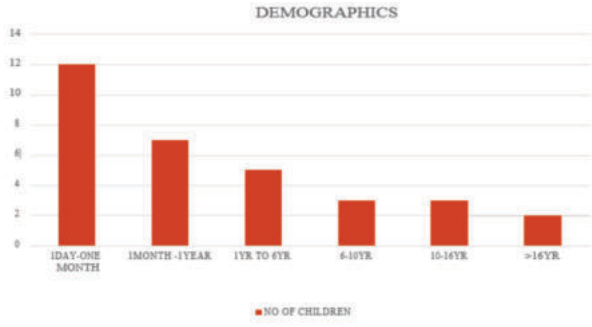
All the spinal dysraphism cases admitted OPD will be included.

Exclusion criteria

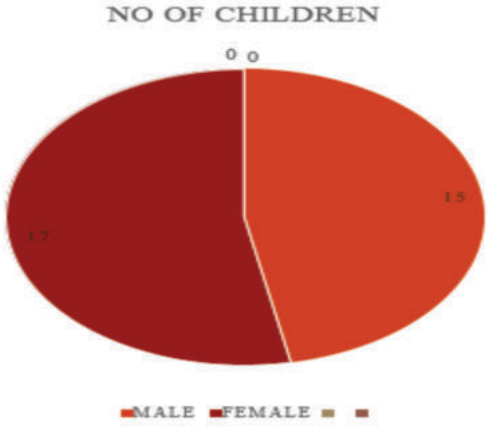
Patients who were already in severe sepsis

RESULTS

- A total of 32 patients were selected in this study.
- The age ranged from 1 day to 18 years



Demographics



Sex

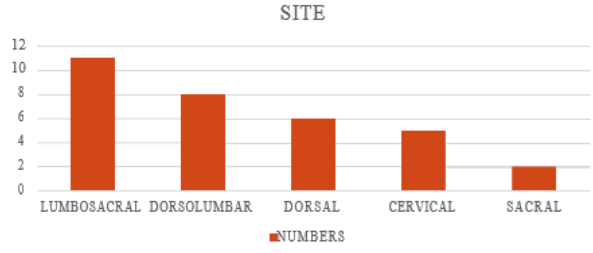
Demographics

AGE	NO OF CASES	PERCENTAGE
1 DAY – 1 MONTH	12	37.5 %
1MONTH – 1YEAR	7	21.9%
1YEAR – 6YEAR	5	15.6%
6YEAR -10YEAR	3	9.4%
10YEAR -16YEAR	3	9.4%
> 16YEARS	2	6.3%
SEX	NO OF CASES	PERCENTAGE
MALE	15	46.8 %
FEMALE	17	53.13 %

- Table - 2 shows that out of 32 cases, 19 had spina bifida aperta (open type) which constituted to 59.37% and spina bifida occulta was observed in 13 cases (closed type) which constituted to 40.63%.

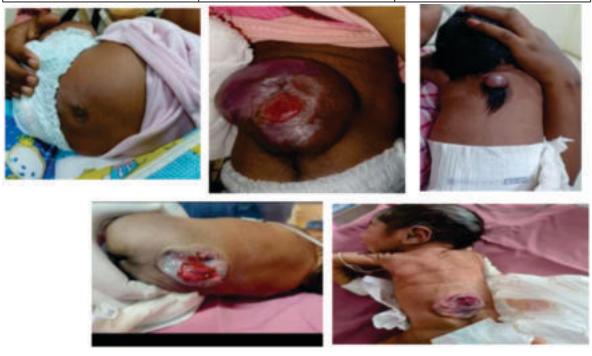
TYPE OF DYSRAPHISMS	NO OF CASES	PERCENTAGE
OPEN	19	59.37
CLOSED	13	40.63

Table - 3 shows that in this study, the occurrence of spinal dysraphism was all over the spine. The most common site was the lumbo-sacral region in 11 patients (34.37%), then dorso- lumbar region in 8 patients (25%) patients. 76patients present with spina bifida in the upper dorsal region and 5 patients in cervical region and 2 patients in sacral region.



Site Of The Lesion

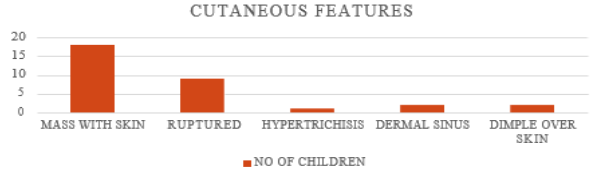
SITE	NO OF CASES	PERCENTAGE
CERVICAL	5	6.4%
DORSAL	6	18.7%
DORSOLUMBAR	8	25%
LUMBOSACRAL	11	34.37%
SACRAL	2	6.25%



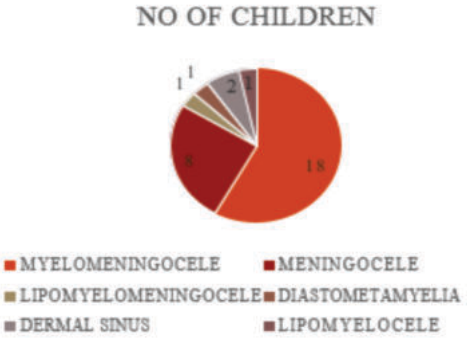
Clinical Features

Cutaneous Features

CLINICAL FEATURES (CUTANEOUS)	NO OF CASES	PERCENTAGE
MASS SKIN COVERED	18	56.2
RUPTURED	9	28.12
HYPERTRICHISIS	1	3.13
DERMAL SINUS	2	6.25
DIMPLE OVER THE SKIN	2	6.25



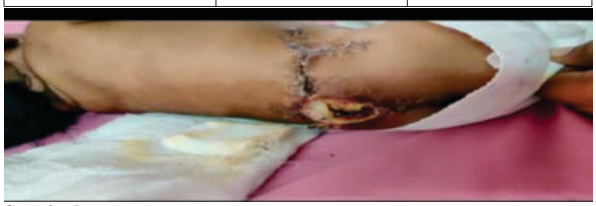
MRI FINDINGS	NO OF CASES	%
Myelomeningocele	15	46.87
MLipoRmyIelomeningocele	4	12.5
Meningocele	3	9.37
Lipomyelocele	2	6.25
Diastometamyelia	2	6.25
Dermal sinus	2	6.25



Anomaly	NO OF CASES	%
Hydrocephalus	10	31.25
Arnold chiari type ll	8	25
Low thethered cord	5	15.6
Syringomyelia	2	6.25
Thickened flavum terminale	2	6.25
Syringohydromyelia	2	6.25
Corpus callosal agenesis	1	3.12
Sacral agenesis	1	3.12
Arachnoid cyst	1	3.12

Complications

COMPLICATIONS	NO OF PATIENTS	PERCENTAGE
CSF LEAK	6	18.75
WOUND INFECTION	8	25 %
SKIN NECROSIS	5	15.6%
VENTRICULITIS	3	9.3%
PARAPARESIS	4	12.25%
DEATH	2	6%



Surgical outcome

Preoperative deficits	no.of .cases	improved	status quo	detoriation
Pain	5	5	-	-
Motor weakness	14	8	5	1
Sensory loss	9	3	7	-
Sphinter dysfunction	5	2	3	-
Trophic ulcer	3	2	1	-
Orthopedic deformities	9	-	9	-

DISCUSSION

- SPECTRUM OF DYSRAPHISMS MIRROR INDIAN SPECTRUM WITH MYELOMENINGOCELE COMMON ONE ,WOUND INFECTION & CSF LEAK AS MOST COMMON COMPLICATION,&HYDROCEPHALUS COMMONLY ASSOCIATED WITH DYSRAPHISMS ,SO BRAIN SCREENING NEEDED BEFORE PLANNING THE MANAGEMENT.
- MULTIMODALITY MANAGEMENT NEEDEDWITH NEUROSURGEONS TO IMPROVE THE QUALITY OF LIFE AND OUTCOMES

CONCLUSION

- The most common congenital cause of disability in children is

spinal dysraphism encountered by neurosurgeon. Open type spina bifida is more common than closed one.

- At peripheral centres, inadequate treatment should be avoided.
- Spinal dysraphism patients should be referred to higher tertiary centre where all the facilities are provided to the patients.
- To avoid complications, the post-operative care is equally important and for better outcome.

REFERENCES

1. American Society of Pediatric Neurosurgeons – Pediatric Neurosurgery – Diastematomyelia Repair, 2001; 325– 7.
2. Venkataramana NK. India pediatric neurosciences.com 2015.
3. Toriello HV. Folic acid and neural tube defects. Genet Med., 2005; 7: 283-4.
4. Frey L, Hauser WA. Epidemiology of neural tube defects. Epilepsia, 2003; 44: 4-13.
5. Rothman-Simone.The spine Expert, 6th edition;Vol 1, Ch 1, p. 2-13.
6. B. Hayagriva Rao, K.S.Vara Prasad, K. Indu Sekhar, B. Raja Sekhar. Study on spinal dysraphism in tertiary care centre, andhra medical college,Visakhapatnam. J Evid Based Med Healthc., 2015; 2(6).
7. O'Neill OR, Piatt JH Jr, Mitchell P, et al. Agenesis and dysgenesis of the sacrum: Neurosurgical implications. Pediatr Neurosurg., 1995; 22: 20–28.
8. José Gilberto de Brito Henriques, Geraldo Pianetti Filho, Petrônio Rabelo Costa, Karina Santos Wandeck Henriques, Francisco Otaviano Lima Perpétuo. Screening of occult spinal dysraphism by ultrasonography. Arq. Neuro-Psiquiatr., 2004; 62(3).
9. Guggisberg D, Hadj-Rabia S,Viney C, et al. Skin markers of occult spinal dysraphism in children: a review of 54 cases. Arch Dermatol., 2004; 140: 1109- 1115.
10. Oran S. Aaronson, Marta HernanzSchulman, Joseph P. Bruner, et al. Radiology, 2003; 227: 839–843.