Results

RESULTS

Incidence of intrauterine hydrocephalus and results of obstetric management; the study revealed 4 cases of hydrocephalus (1 male , 3 females) in 1140 deliveries in Assiut territory (Incidence of 3.51/1000 deliveries), the 4 cases had a cephalic presentation with an average duration of labour of 18 hours , and all the cases were delivered by destructive procedure (Cephalotomy) , two cases had an associated spine bifida (1 made , 1 female)

Clinical data

This study covered 31 cases of hydrocephalus operated upon in Assiut University hospital during the period from October 1979 to February 1982.

The sex ratio in the total presented cases (99 cases)was male/female 74/25 , and 23/8 in the operated cases (31 cases).

Table (2) Incidence of hydrocephalus inrelation to parity of the monthers.

Parity	(1st)	(2nd)	(3rd)	(14th)	> 4th
Number of cases	14	4	3	4	6
percentage to total number	45.2%	12.9%	9.7%	12.9%	19.3%

Table (3) Incidence of hydrocephalus in relation to age of the mothers.

age group	< 20 years	20 - 30	> 30 years
Number of cases	--	24.0	7.0
Percentage	0%	77.4%	22.6%

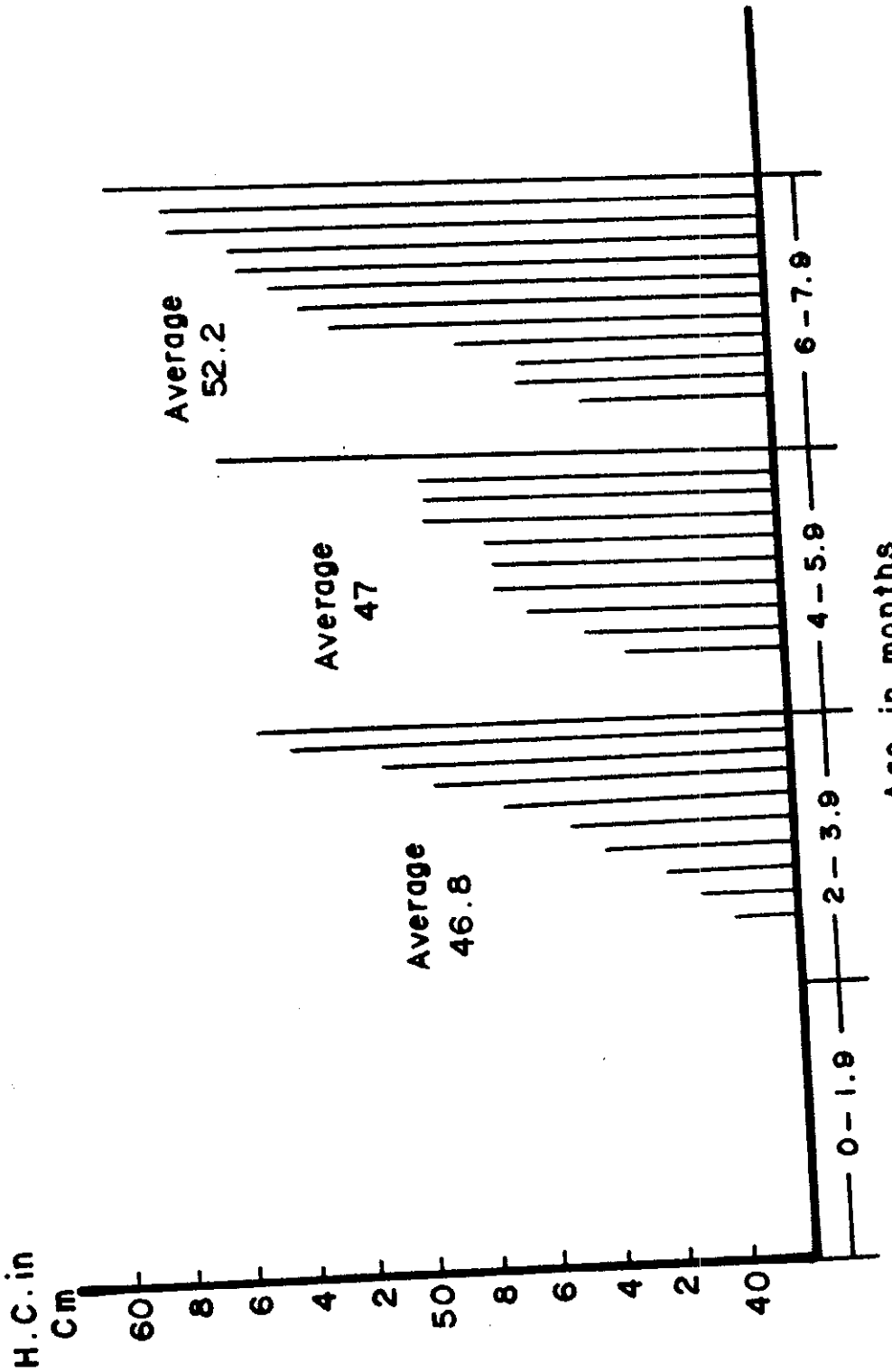
Family history of consanguinous marriage was encountered in 13 cases and all the cases have a negative history of maternal illness , trauma and drug intake in the first trimester and history of full term normal delivery.

Table (4) Presenting complaint in congenital hydrocephalus.

Serial	Presenting complaint	No. of cases
1.	Progressive head enlargement	10
2.	Bulging anterior fontanell	3
3.	Inability to control the head	--
4.	Associated anomaly.	7
5.	1 + 2 above	3
6.	1 + 3 above	8

Table (5) Presenting age

Age group in months	0-1.9	2-3.9	4-5.9	6-8
No. of cases	--	10	9	12



Note: Each line represent a case .

Fig.(11) Age_Head circumference representation.

Table (6) Relation of presenting age to head ciscum-ference.

Age group	No.of cases	Range of H.C.(cm)	Average H.C.(cm)
0-1.9	--	--	--
2-3.9	10	40-55	46.8
4-5.9	9	43-56	77.0
6-7.9	12	--	52.2

Table (6) and Fig. (11) shows that , the range of head circumference and the average head circumference increases with age. Also there is wide variation of H.C. in each age group.

Table (7) Presenting sings in congenital hydrocephalus

Physical signs	+ ve	- ve
1. Craniofacial disproportion	31	--
2. Sun set appearance.	30	1
3. Dilated visible scalp veins.	31	--
4. Tense widely opened ant.font	31	--
5. Tense opened post. fontanell	11	20
6. Exagerated reflexes of L.L.	26	5
7. Dilated fixed pupil.	--	31
8. Nystagmus.	--	31
9. 6th nerve palsy.	1	30
10. Scalp sores.	1	30

Table (7) show cranio fascial disproportion ; sun set appearance, dilated visible scalp veins, tense widely opened anterior fontanell are a constant signs of congential hydrocephalus , dilated fixed pupil -, nystagmus, 6th nerve palsy and scalp sores are rare signs. Tense opend posterior fontanell and exagerated reflexes of lower limbs are variable depending on the type and severity of hydrocephalus.

Table (8) Radialogical Findings.

Rodialogical signs	Number of +ve cases	Number of -ve cases
1. Cranio facial disproportion	31	--
2. Thin skull bone..	31	--
3. Supra tentorial sutural sporation.	31	--
4. Infra tenterial sutural separation	11	20
5. Asymmetry of the skull.	--	31
6. Bulging opened Ant. F.	31	--
7. Bulyiy apened Post. F.	11	20
8. High inion site.	11	20
9. High I.C.T.	--	31
10. Intracranial calcification.	--	31
11. Tip of atrial catheter at T_5-T_6.	20	11
12. Low tip of atrial catheter at T_7.	11	20
13. Normal site of vent. catheter.	31	--

Table (8) show cranio fascial dispropotion, thin skull , bones , opened anterior fontanell , supra tontorial sutural

separation are a constant radiological signs, while asymmetry of the skull , signs of increased intracranial tension and intracranial calcifications are a rare radiological signs, bulging opened posterior fontanell , high inion , infratentorial sutural separation are a constant signs in cases in which the 4th ventricle is dilated (communcating hydrocephalus).

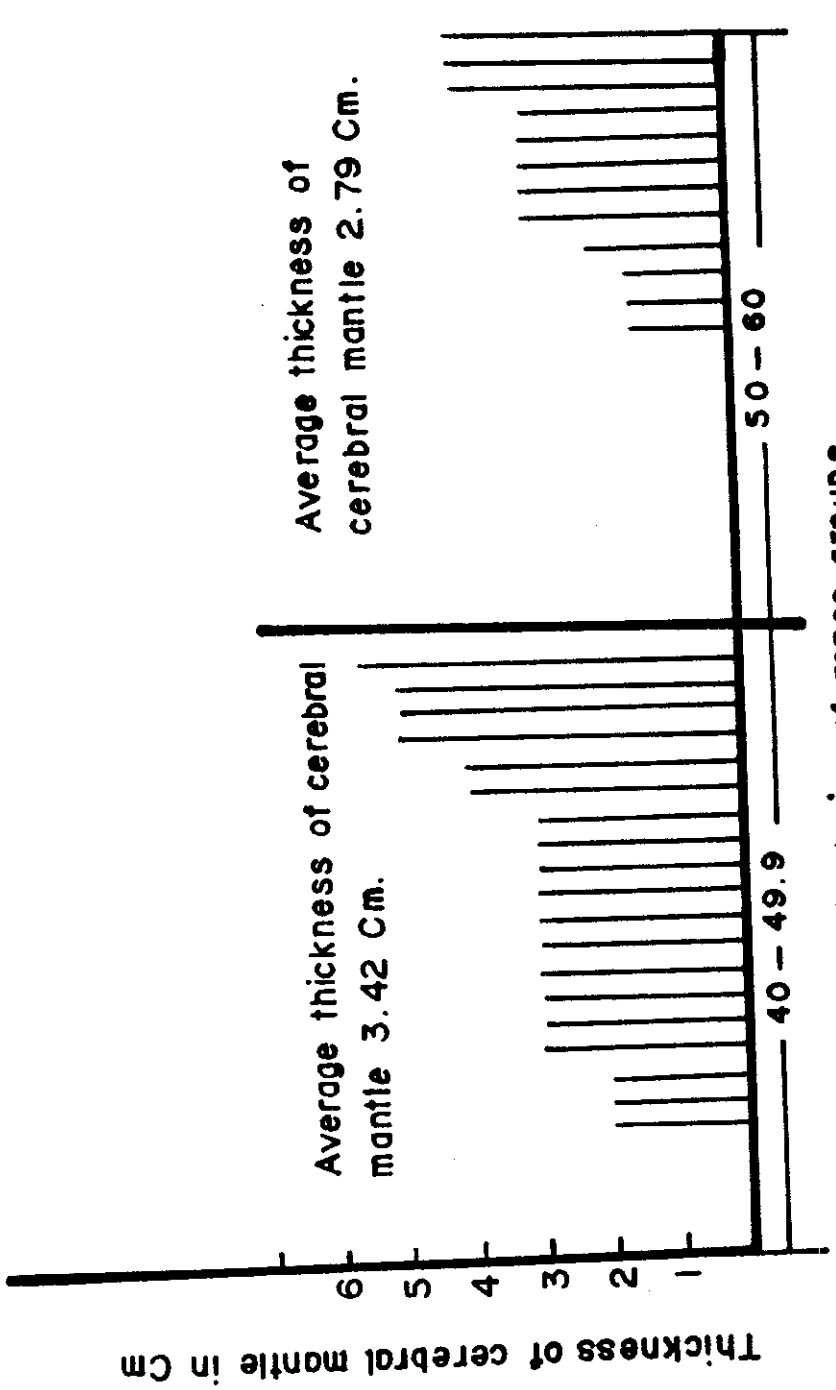
Operative data

The cerebrospinal fluid pressure was high in 29 cases and low in two cases.xanthochromia was encountered in one case. The right internal jugular vein was catheterized in 24 cases and the common fascial vein in 7 cases. Cardiac irrigularities are noticed in 15 cases during in stillation of the cardiac catheter. Cardiac arrest occured in one case and he was resuscitated.

Table (9) Relation of head circumference to thickness of cerebral mantle.

Head circumfer-ence groups	No.of cases	Range of thickness of cerbral mantle.	Averag thickness of cerebral mantle.
40-49.9 cm	19	2.0-5.5 cm	3.42 cm
50-60 cm	12	1.5-4.0	2.79 cm

Table (9) and Fig. (12) show that least thickness of cerebral mantle is 1.5 cm and lie in the head circumfer ence group from 50-60 cm. The most thick cerebral mantle



N.B. Each line represent a case

Fig.(12): Head circumference – cerebralmantle thickness representation.

is 5.5. and lie in the head circumference group 40-49.9. , 19 cases (60%) of the case lie in the head circumference group from 40-49.9 cm with an average thickness of cerebral mantle 3.42 cm. 12 cases (40%) of the cases lie in the head ciscunsference group from 50-60 cm. with an average thickness of cerebral mantle 2.79 cm.

Table (10) Mortality and cimplications of ventriculo -atrial shunt.

Complications	No.of cases
Major	
1. Ventriculitis.	2(2)
2. Subdural haematoma.	I(1)
3. Thrombo-embolism.	----
4. Obstruction.	3
Minor	
1. Meningitis.	1
2. Convulsion & spasticity	2
3. C.S.F.collection around the flushing reservoir.	1

N.B. Figures in parenthesis refer to deaths.

Shunt revision was done in the 3 cases of shunt obstruction and revealed an obstructed ventricular catheter by pieces of brain matter.

The total mortality is 9.6% , Infection (ventriculities) is the most deadfull complication.

Table (11) Duration of post-operative follow up

Duration of follow up in months	less than 3 month	3-6	6-9	9-12	12-18	mor than 18 months-24.
No.of cases	4	7	9*	4	2	2
Total average	8 months					

Table (12) Relation between residence and average period of follow up.

Residence of the case	No.of cases	Average period of follow up in months
Assiut	15	10.73
El-Menia	6	4.33
Sohage	6	5.66
Nagaa Hamady	1	4.00
Total	28	7.89

Table (12) show the average period of follow up is highly related to the distance from the residence of the cases to the neurosurgical centre in Assiut.