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Indian Journal of Surgical Nursing / Volume 7 Number 3 / September - December 2018

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Indian Journal of Waste Management	Semiannual	9500	8500	742	664
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International Journal of Practical Nursing	Triannual	5500	5000	430	201
International Physiology	Triannual	7500	7000	430	547
Journal of Animal Feed Science and Technology	Semiannual	7800	7000	609	570
Journal of Cardiovascular Medicine and Surgery	Quarterly	10000	9500	781	742
Journal of Forensic Chemistry and Toxicology	Semiannual	9500	9000	742	703
Journal of Global Medical Education and Research	Semiannual	5900	5500	440	410
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Indian Journal of Surgical Nursing

Articles September Vo	r - December 2018 olume 7 Number 3
Contents	
Original Articles	
Effectiveness of Modified Early Ambulation on Activities of Daily Living, Functional Activity and Psychological Wellbeing among the Patients Undergone Abdominal Surgery I. Clement, Bhagavan. B.C., P.V. Ramachandran, B. T. Basvanthappa	89
Review Articles	
Vascular Access- Hemodialysis Seema Varghese	99
Striae Gravidarum Score - An Indicator to Anticipate Perineal Tear During Chil Liji Varghese	d Birth 101
Case Articles	
When Heart Kills Liver: Nutmeg Liver – Case Report Settepalli Jasmindebora	105
Subject Index	111
Author Index	112
Guidelines for Authors	113

88										
	E									
47							N/A	Q/N	E/p	4.05
urgical%20Nursing	Contact	 Login/ kegister 						(Rech		7
dh=Ind/an%20Jcu/mal%20of%205	ICI Journals Master List									
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Effectiveness of Modified Early Ambulation on Activities of Daily Living, Functional Activity and Psychological Wellbeing among the Patients Undergone Abdominal Surgery

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I. Clement¹, Bhagavan. B.C.², P.V. Ramachandran³, B.T. Basvanthappa⁴

Abstract

An experimental study on effectiveness of modified early ambulation on activities of daily living, functional activity and psychological wellbeing among the patients undergone abdominal surgery in Kempagowda Institute of Medical Sciences, Bangalore. Complications due to lack of early ambulation are the main cause for morbidity and mortality in India and all over the world. Many researchers have been done to prove the early ambulation improves postoperative recovery, reduce incidence of postoperative complications and promote early discharge. The investigator has selected only on three aspects of postoperative recovery such as activities of daily living, functional activity and psychological wellbeing. The main objectives of the study were directed to determine the effectiveness of modified early ambulation on activities of daily living, functional activity and psychological wellbeing among the patients undergone abdominal surgery in the both study and control group. Also the study goal was directed to determine the difference between selected demographic variables and activities of daily living, functional activity and psychological wellbeing in the study group and the control group. The collected data were collected and analyzed by using descriptive and inferential statistics (F-test and t-test) was used to evaluate the effectiveness of modified early ambulation. The finding of the study revealed that there was significant difference in modified early ambulation and postoperative scores in the activities of daily living, functional activity and psychological wellbeing in the study group. There is no significant difference in relation to selected demographic variables and activities of daily living, functional activity and psychological wellbeing scores. The conclusion of the study reveals that there is an effectiveness of modified early ambulation on patient's undergone abdominal surgeries.

Keywords: Modified Early Ambulation; Activities of Daily Living; Functional Activity; and Psychological Wellbeing.

Introduction

Early ambulation is an important component of postoperative care after abdominal surgery. Its benefits were first reported in 1940's, when early ambulation was observed to hasten recovery and reduce the incidence of postoperative pulmonary complications (Briger 1983). Early ambulation involves an upright

Author Affiliation: ¹Principal, Columbia College of Nursing, Bengaluru, 560056, India. ²Professor of Surgery, Kempagowda Institute of Medical Sciences, Bangalore, Karnataka 560070, India. ³Former Chairman, College of Nursing, Sri Ramachandra Medical College and Research Institute, Porur, Chennai, Tamil Nadu 600116, India. ⁴Principal, Rajarajeshweri College of Nursing, Bangalore, Karnataka 560074, India.

Corresponding Author: I. Clement, Principal, Columbia College of Nursing, Bengaluru, Karnataka 560056, India.

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position appears to be of great benefits in the early postoperative period with evidence of improvement in pulmonary function (Nielson et al. 2003). Upright ambulation assists in the prevention of functional decline and may have a positive effect on depression and anxiety [2] (Brooks- Bruun 1995). Modified early ambulation following abdominal surgery has been measured as the time taken to achieve mobility goals such as sitting out of bed, ambulating with assistance or ambulating independently (Mackay and Ellis 2002, Olsen et al. 1997). Ramachandran (1972) conducted an experimental study on the effects of structured and unstructured preoperative teaching on early ambulation during elective abdominal surgery. The study was conducted in Christian Medical College and Hospital, Vellore. The tool used was observation checklist on ability on activities of the patients postoperatively up to the seventh day also Interview guide on early ambulation. The study finally revealed that, there was a significant difference in structured and unstructured preoperative teaching

90

on early ambulation among the study group and the control group.

Statement of problem

Effectiveness of modified early ambulation on activities of daily living, functional activity and psychological wellbeing among patients undergone abdominal surgery in Kempegowda Institute of Medical Sciences, Bangalore, Karnataka

Objectives of the study

- 1. To find out the effectiveness of modified early ambulation on activities of daily living of the patient undergone abdominal surgery in the study group and control group.
- 2. To assess the effectiveness of modified early ambulation on functional activity of the patient undergone abdominal surgery in the study group and control group.
- 3. To determine the effectiveness of modified early ambulation on psychological wellbeing of the patient undergone abdominal surgery in the study group and control group.
- 4. To determine the difference between selected demographic variables and activities of daily living, functional activity and psychological wellbeing in the study group and control group.

Hypotheses

Hypothesis 1: H1: There is a significant difference in the activities of daily living among the patients undergone abdominal surgery who availed the intervention than those who do not.

Hypothesis 2: H2: There is a significant difference in the functional activity among the patients undergone abdominal surgery who availed the intervention than those who do not.

Hypothesis 3: H3: There is a significant difference in the psychological wellbeing among the patients undergone abdominal surgery who availed the intervention than those who do not.

Hypothesis 4: H4: There is no significant difference among selected variables and activities of daily living functional activity, psychological wellbeing among the patients undergone abdominal surgery that availed the intervention than those who do not.

Research Methodology

The study design was designed to determine the "effectiveness of modified early ambulation on activities of daily living, functional activity and psychological wellbeing among patient's undergone abdominal surgery in Kempegowda Institute of Medical Sciences, Bangalore, Karnataka". Early ambulation procedure done by randomized control experimental design. The schematic representation is as follows

Setting of the study: The study was conducted in Kempagowda Institute of Medical Sciences, Bangalore, it is 750 bedded, 300 surgical beds (both male and female) and 5-7 major abdominal surgeries are conducted per day. The study was conducted in male and female surgical wards and surgical intensive care unit in the hospital

Population: The accessible population for the study was patient's undergone abdominal surgeries in Kempagowda Institute of Medical Sciences, Bangalore.

Sample: The sample for the study is selected randomly for those patients diagnosed to undergone major abdominal surgery. Samples were approached and enrolled in preoperative phase, in order to avoid the dropouts and postoperative exclusions subjects who can be ambulated in the 16th hour is selected for the study group and included in the study. Simultaneously subjects were assigned to be enrolled in for control group.

Sample size: In order to get a comfortable sample size, a total of 150 patients were selected, out of that each 75 were choose for study and control group respectively. In those selected samples were randomly assigned to participate in the study (n = 75 patients) for study group and (n = 75 patients) for control group respectively.

Research design notification: (Table 1)

Sample technique: A simple random sampling by using a lottery method was adopted to assign the group. Samples were randomly assigned in study and control group. Equal number of lots (75 chits for the study group and 75 chits for the control group) were made and kept in a box. The lots were picked by the participants from the box. Based on the lot, 75 patients were assigned to the study group and 75 patients were assigned to the control

Instrumentation and Scoring Procedure

The study tool consist of four sections

Section - I: Demographic and co-morbidity variables.

Section - II: Observation schedule on restoration of activities of daily living

I. Clement, Bhagavan. B.C, P.V. Ramachandran / Effectiveness of Modified Early
Ambulation on Activities of Daily Living, Functional Activity and Psychological
Wellbeing among the Patients Undergone Abdominal Surgery

Group	Pretest (15 th hour after surgery)	Intervention (initiated at 16 th hour after surgery)	ADL Function Psycholog	Pos measured i nal- measure gical- measu	ttest n every 24 h ed in every 1 ired in every	ours 2 hours 24 hours	
Study	S1	X	Activities of daily living				
		Routine care	24hrs	48hrs	72hrs	96hrs	120
		ambulation	S2	S 3	S4	S5	S6
		intervention on 8	Functional activity				
		hourly, except 7pm	27hrs	39hrs	51hrs	63hrs	75hrs
		-7am) The intervention done till the patients walks independently	S2	S 3	S4	S5	S6
			Psychological wellbeing				
			24hrs	48hrs	72hrs	96hrs	120hrs
			S2	S 3	S4	S5	S6
Control	C1	Routine care	Activities of daily living				
			24hrs	48hrs	72hrs	96hrs	120hrs
			C2	C3	C4	C5	C6
			Functional activity				
			27hrs	39hrs	51hrs	63hrs	75hrs
			C2	C3	C4	C5	C6
			psychological wellbeing				
			24hrs	48hrs	72hrs	96hrs	120hrs
			C2	C3	C4	C5	C6

Table 1: research design notification

Key:

R: Randomization

X: The intervention by modified early ambulation

S1, C1: Pretest on activities of daily living, functional activity and psychological wellbeing in the study and control group.

S2, S3, S4, S5, S6: Posttest activities of daily living, functional activity and psychological of wellbeing in the study group

C2, C3, C4, C5, C6: Posttest on activities of daily living, functional activity and psychological wellbeing in control group.

Section - III: Observation schedule on restoration of functional activities.

Section - IV: Interview guide on psychological wellbeing.

Section: I: Demographic variables such as age, sex, education, exercise, sources of knowledge and co-morbidity. Verbal response was obtained from the patient's undergone abdominal surgery.

Section: II: Consisted of items on activities of daily living among the postoperative patients such as oral hygiene, nutritional needs, elimination needs (Urination and defection), combing the hair, changing the dress and taking Bath. By observing the patients underwent abdominal surgery, every 24 hours after the surgery.

Scoring and interpretation: Activities of daily living were measured in terms of activities of daily living scores. The minimum score was 7 and maximum score was 21.

Reliability: The reliability if the tool was while walking, Indian Journal of Surgical Nursing / Volume 7 Number 3 / September - December 2018

established by test-retest method and the calculated correlated coefficient was 0.83

Section: III: Consisted of items on restoration of functional activities such as ambulation (sitting, standing and walking), Respiratory sounds (abnormal and normal sounds), Bowel movements (absent and present), with drawl of IV fluids, with drawl of NG tubes, with drawl of Foley's catheter, starting oral fluids and pain killer administration. The data was obtained by observing the patients undergone abdominal surgery. Every 12 hours after the ambulation.

Scoring and interpretation: Restoration of functional activity was measured in terms of functional activity scores. The minimum score was 0 and maximum score was 10.

Reliability: Calculated inter-rater reliability coefficient score was 0.89.

Section: IV: Consisted of items on psychological wellbeing such as sense of recovery, confidence while walking, importance of walking soon after surgery, abdominal pain reduction after walking, sleep, increase the length of walking soon after surgery, abdominal pain reduction after walking, sleep, increase the length of walking every time, passed flatus, family members happy to watch while walking, ability to control the urine flow and patients opinion about walking after 16 hour of surgery is good. The data was obtained through verbal response from the patient's undergone abdominal surgery in every 24 hours after the surgery.

Scoring and interpretation: Psychological wellbeing was measured in terms of psychological wellbeing scores. The minimum score was 0 and maximum was 10.

Reliability: The calculated inter-rater reliability co-efficient showed a score of 0.83.

Data Analysis & Interpretations

The collected data were carefully coded and analyze using the SPSS package

(11.5). The modified early ambulation intervention was measured by observational check list and interview schedule at 15th hour (pretest). Modified early ambulation intervention done at 16th hour after surgery for the study group. After modified early ambulation procedures the posttest conducted to measure the effectiveness on activities of daily living (ADL), functional activity and psychological wellbeing. The activities of daily living (ADL) posttest scores measured at 24, 48, 72, 96 and 120 hours. The functional activity posttest scores measured at 27, 39, 51, 63 and 75 hours. The psychological wellbeing posttest scores measured at 24, 48, 72, 96 and 120 hours. At the end, data pertaining to 75 study subjects were included

Table 2: Frequency and percentage distribution of demographic variables among study and control group. n=150

S.No	Demographic variables	Study Group (n=75)		Control Group (n=75)		χ2 value and P	
		No	%	No	%	value	
1	Age (in Years)						
	a. 41-50	25	33.33	28	37.33	0.36	
	b. 51-60	26	34.67	24	32.00	df 2	
	c. 61-70	24	32.00	23	30.67	N.S	
2	Sex						
	a. Male	42	56.00	44	58.67	0.35	
	b. Female	33	44.00	31	41.33	df 1 N.S	
3	Education						
	a. Primary School	19	25.33	15	20.00	4.67	
	b. High School	17	22.67	21	28.00	df 4	
	c. Higher school	17	22.67	20	26.67	N.S	
	d. College	14	18.67	13	17.33	p=0.14	
	e. Professional	8	10.67	6	8.00		
4	Exercise						
	a. No Practice of Regular exercise	39	52.00	42	56.00	0.89	
	b. Regular practice of exercise	36	48.00	33	44.00	df 1 N.S	
5	Source of knowledge						
	a. Family members	18	24.00	19	25.33	4.8	
	b. Friends	20	26.67	26	34.67	df 4	
	c. News paper	21	28.00	17	22.67	N.S	
	d. Television	16	21.33	13	17.33	p=0.72	
	e. None	0	0.00	0	0.00		
6	Co-Morbidity						
	a. Diabetes	13	17.33	11	14.67	9.07	
	b. Hypertension	18	24.00	19	25.33	df 4	
	c. Cardiac illness	16	21.33	17	22.67	N.S	
	d. Respiratory illness	17	22.67	19	25.33		
	e. Renal illness	11	14.67	9	12.00		

N.S- Not Significant at p>0.05

S-Significant at P< 0.05 level

for analysis. Similarly 75 subjects allocated to control group, were included for analysis.

Table-2 Reveals the distribution of patients had undergone abdominal surgeries regarding demographic variables such as age, sex, education, exercise source of knowledge and co-morbidity. Regarding age the majority of them 26 (35%) were in the age between 51-60 years in the study group and 28 (37%) of them were in the age between 41-50 years in the control group. 42 (56%) were male in the study group and 44 (57%) of them were male in the control group. 19 (25%) of them were studied primary school in the study group and 21 (28%) of them studied high school in the control group. 39 (52%) were not doing regular practice of exercise in the study group and 42 (56%) were not doing regular practice of exercise in the control group. 20 (27%) were known early ambulation through friends in the study group and 26 (35%) were known about early ambulation through friends in the control group. 18 (24%) were the known case of hypertension in the study group and 19 (25%) were the known case of hypertension and respiratory diseases.

Research Findings

I. Findings on demographic variables of the patients undergone abdominal surgery in study group and control group: Majority of the patients had undergone abdominal surgery in the in the *study group* 26 (35%) were in the age group of 51-60 years, 42 (56%) were male, studied primary school 19 (26%), did not do regular exercises 39 (52%), known about the benefits of early ambulation through friends 20 (27%) and 18 (24%) has hypertension. Majority of patients had abdominal surgery in the *control group* were in the age group of 41-50 years 28 (37%), male 44 (59%), studied high school 21 (28%), did not do regular practice of exercises 42 (56%), known about the benefits of early ambulation through friends 26 (35%) and 19 (25%) also has hypertension.

II. Findings on effectiveness of modified early ambulation on activities of daily living of patients undergone abdominal surgery in the study group and control group:

The posttest mean scores (SD) reported in the study group at regular interval of 24 hours after surgery 12.96 (1.14), 17.75 (0.9), 20.51 (0.83), 20.95 (0.23) and 21 (0) in control group 7.72 (1.03), 10.56 (1.71), 13.88 (1.68), 16.98 (1.42) and 19.6 (1.03) respectively. The obtained t value between study



Indian Journal of Surgical Nursing / Volume 7 Number 3 / September - December 2018

group and control group posttest activities of daily living scores at regular intervals of 24 hours after surgery were t = 29.54 (p<0.01), t = 32.22 (p<0.01), t = 30.64 (p<0.01), t = 23.9 (p<0.01), and t =11.77 (p<0.01) modified early ambulation significantly contributed (Graph 1).

III. Findings on effectiveness of modified early ambulation and functional activity of patients undergone abdominal surgery in the study group and control group:

The posttest mean scores (SD) reported in the study group at regular intervals of 12 hour after ambulation 4.24 (0.49), 5.77 (0.69), 7.53 (0.9), 9.4 (0.86) and 9.85 (0.35) and in the control group 2.5 (0.68), 3.62 (0.67), 4.61 (0.73), 5.77 (0.74) and 6.85 (0.81) respectively. The obtained t value between study group and control group posttest functional restoration scores at regular intervals of 12 hours after ambulation were t = 17.98 (p<0.01), 19.36 (p<0.01), 21. 82 (p<0.01), 27.71 (p<0.01) and 29.44 (p<0.01) modified early ambulation significantly contributed (Graph 2).

IV. Findings on effectiveness of modified early ambulation and psychological wellbeing of patients undergone abdominal surgery in the study group and control group: The posttest mean scores (SD) reported in the study group at regular intervals of 24 hours after surgery 5.89 (0.62), 7.8 (0.69), 9.72 (0.48), 10 (0), and 10 (0) and in the control group 2.57 (0.59), 3.62 (0.69), 4.78 (0.94), 5.9 (1.12) and 7.2 (1.3) respectively. The obtained t value between study group and control group posttest psychological wellbeing scores at regular intervals of 12 hours after ambulation were t = 33.59 (p<0.01), t = 37.1 (p<0.01), t = 40.53 (p<0.01), t = 31.7 (p<0.01) and t = 18.65 (p<0.01) modified early ambulation significantly contributed.

V. Findings on difference among selected variables and activities of daily living, functional activity and psychological wellbeing on patients undergone abdominal surgery in the study group and control group: The obtained F and t values among demographic variables and activities of daily living in the study



Indian Journal of Surgical Nursing / Volume 7 Number 3 / September - December 2018

I. Clement, Bhagavan. B.C, P.V. Ramachandran / Effectiveness of Modified Early Ambulation on Activities of Daily Living, Functional Activity and Psychological Wellbeing among the Patients Undergone Abdominal Surgery



Graph 3:

group were F=.721 (P=.554), t=1.13 (p=.273), F=1.62 (1.328), t = 1.24 (.283), F=.731 (.564), F=.724 (p=.543) and F=.725 (p=.543). In the control group F= 1.625 (.217), t=.027 (p=.058), F=1.752 (P=.243), t=.29 (p=.059), F=1.723 (P=.224), F=.724 (p=.543), F=1.645 (P=.346) and F=1.645 (P=346) regarding activities of daily living and demographic variables like age, sex, education, exercise, source of knowledge and co-morbidity were not significant at .05 level in the study group and control group. The demographic variables did not influence the posttest activities of daily living scores in the study group and control group, the effectiveness of modified early ambulation was independent of the demographic variables.

The obtained F and t values among demographic variables and functional activity in the study group were F=.826 (p =.499), t = .518 (p =.611), F =.632 (p =.347), t =.618 (p =.643), F =.743 (p =.387) and F=.639 (P=.462). In the control group F = 1.153

(p =.358), t =.373 (p =.714), F =1.075 (p =.219), t =.328 (p =.643), F = 1.348 (p =.475) and F=1.462 (p=.592) regarding functional activity and demographic variables like age, sex, education, exercise, source of knowledge and co-morbidity were not significant at .05 level in the study group and control group. The demographic variables did not influence the posttest functional activity scores in the study group and control group. The effectiveness of modified early ambulation was independent of the demographic variables.

The obtained F and t values among demographic variables and psychological wellbeing in the study group were F = .032 (p =.992), t = .186 (.855), F =1.64 (p =.843), t =.543 (.684), F =.138 (p =.993) and F=.149 (p=.732). In the control group F =2.159 (p =.133), t =.269 (p =.943), F = 2.492 (p =.148), t =.652 (p =.537), F = 2.243 (p =1.45), F =2.243 (p =1.45) and F=1.746 (p=.139) regarding psychological wellbeing and demographic variables like age, sex, education,

exercise, source of knowledge and co- morbidity were not significant at .05 level in the study group and control group. The demographic variables did not influence the posttest psychological wellbeing scores in the study group and control group. The effectiveness of modified early ambulation was independent of the demographic variables (Graph 3).

Conclusion

The modified early ambulation intervention shown significant changes in the postoperative recovery, it positively influence and improves the postoperative recovery and also physical, functional and psychological wellbeing after surgery will be of greater advantage to the patient. Moreover it forms a holistic approach that helps to maintain health of patients in study group. In this context, finding of this study that modified early ambulation exhibit greater postoperative recovery and higher performance of activities of activities of daily living than control subjects during the initial period of recovery after surgery is noteworthy. The modified early ambulation intervention has 3 main steps sitting in the bed, standing and limited walking and extended walking. The strong motivation, great support and assistance is very much needed for the patient after abdominal surgery.

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IJSN Volume 7, Number 3 © Red Flower Publication Pvt. Ltd

Seema Varghese

Abstract

Even as we speak chronic kidney failure is taking a huge toll on lakhs of families in India. This is unfortunate because kidney failure is the easiest of all organ failures to manage. We have dialysis which can replace kidney function to a significant extent and kidney is the easiest solid organ to transplant. This sad situation is because of a number of factors, the most important of which is the lack of awareness at all levels of the society. Compared to similar patients in the developed world or even some other developing countries, kidney failure patients have extremely poor outcomes in India. As things today we are not even addressing the tip of the iceberg. In the past, one of the major problems and causes of failure in Hemodialysis (HD) was represented by the lack of good vascular access (VA). Obtaining vascular access is one of the most difficult problems associated with HD. To carry out HD, a very rapid blood flow is required and access to a large blood vessel is essential. After the introduction of the fistula, in the last few decades, the advent of prosthetic Arteriovenous graft (AVG) and central venous catheters (CVCs) has given physicians the opportunity to choose the most appropriate VA for HD patients. However, the native AVF remains the first choice for VA, especially because of the infectious and thrombotic complications more frequently associated with AVGs and CVCs.

Keywords: Dialysis; Hemodialysis; Vascular Access; Arteriovenous Graft.

Introduction

Dialysis is started when the patient develops symptoms of severe fluid overload, high potassium levels, acidosis, pericarditis, vomiting, lethargy, fatigue or uremia that are life threatening. Both peritoneal dialysis and hemodialysis involve the movement and diffusion of particles from an area of high concentration to an area of low concentration through semipermeable membrane [1]. Fluid and electrolyte imbalances can be corrected with dialysis. Kidney failure can affect people of any age group. While in the west, the majority of patients are elderly; in India kidney failure patients are much younger and affect predominantly the working population [2].

- Shunts.

Author Affiliation: ¹Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

Corresponding Author: Seema Varghese, Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

E-mail: forseema80@gmail.com Received on 16.08.2018, Accepted on 17.09.2018 - Arteriovenous fistulas (AVSs) and Grafts (AVGs),

- Temporary and semipermanent catheters

- Subcutaneous ports

Shunts: consists of a U shaped Silastic tube divided at the midpoint and each of the two ends is placed in an artery and a vein. Nowadays these are rarely used.

Internal Arteriovenous fistulas and Grafts: provides for arterial blood flow through vein. Radiocephalic / Brescia- Cimino is anastomosis of radial artery to cephalic vein. It is recommended that the AVF be placed at least 3 months prior to the initiation of hemodialysis.

Arteriovenous grafts (AVG's): are made of synthetic materials polytetrafluoroethylene (PTFE) and form a bridge between the radial and arterial and venous blood supplies. An interval of 2-4 weeks is usually necessary to allow the graft to heal.

Temporary Vascular access: A flexible Teflon, silicone rubber or polyurethane catheter is inserted into large veins (internal jugular/ femoral vein/ subcutaneous vein) and provides access to circulation without surgery. These can be left in place for 1-3 weeks.

Subcutaneous ports: incorporating two silicone

Types [2]

catheters positioned in the central venous system and connected to a stainless steel-titanium valve implanted in a subcutaneous pocket.

Physical Examination [3]

Inspection: Look for

Aneurysms

Fistula that does not collapse

Palpable strictures

Arm edema

Prolonged bleeding after needle withdrawal

Palpation (Touch) and Auscultation (listen)

Strong pulse is NOT an evidence of good flow.

Palpable Thrill (Buzzing/ Pulsing feel)

Percussion: NOT performed

Nursing Responsibilities [5]

Nursing measures	Rationale
Hand Hygiene is the prime measure	To reduce risk of infection
Dressing change: 24-48 hrs of insertion (if gauze dressing, then change in every 2 days)	To prevent growth of microorganisms
Aseptic techniques to be maintained always	To prevent infection.
Check vital signs	To check deviation from normal parameters
Check thrill/pulse daily	To evaluate proper functioning of fistula.
Assess the site for any redness, swelling, tenderness/ drainage	To detect early signs of infection.
Follow institution protocol for cleaning solution and type of dressing.	

Patient teaching [5]

- Report any changes you notice (Bleeding/ reduced circulation/infection) in your access to your nurse, doctor or technician.
- Make and keep appointments to have access checked
- Protect your access. Keep it clean, and do not let anyone other than dialysis-trained personnel use it.
- Make sure your access site is used only for dialysis and that no one puts a blood pressure cuff on your access arm.

- Encourage to perform regular hand exercises to promote maturation of a new fistula. Exercises means squeezing a rubber ball for forearm fistula in order to increase the size of the vessels and thereby to accommodate the large-bore needles used in hemodialysis.
- Be careful not to bump or cut your access site.
- Do not wear tight clothing or jewellery over your access site.
- Do not sleep with your access arm under your body or head.
- Do not lift heavy objects or put pressure on your access arm (i.e., grocery bags, etc.).
- Do not take Blood pressure, use a tourniquet, draw blood/start any intravenous lines in the affected arm. Injections should be avoided if possible.

Conclusion

The bottom line goal of Vascular Access is to improve and promote the quality of care and quality of life for patients living with kidney failure by placing the best access that has the least complications. Fistulas are considered to be the "gold standard" for hemodialysis access. They last longer, need fewer repairs, and are associated with lower rates of infections, hospitalization, and death than other types of accesses.

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Striae Gravidarum Score - An Indicator To Anticipate Perineal Tear During Child Birth

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Liji Varghese

Abstract

Perineal trauma is the damage that occur to the female genitals during labour, which can occur spontaneously or iatrogenically. Perineal trauma results discomforts and complications to a larger extent after childbirth affecting their daily actitivity. The extent of perineal tear can be reduced with simple assessment of striae gravidarum. Striae, are stretch marks which can be seen during pregnancy. These striae uausally occurs due to poor skin elasticity, therefore calculating striae gravidarum during III trimester can reduce the risk of perineal injury and enhancing the midwifes to go for intervention such as episiotomy, the aim of episiotomy is to increase the diameter of the vaginal outlet to facilitate the passage of the fetal head and, ideally, prevent a vaginal tear. Some studies shows that, through clinical assessment in late pregnancy of striae gravidarum can predict the extent of perineal tear helping to take appropriate measures during labour. Thus, this review aimed to focus on striae gravidarum as an effective tool indicating the breadth of perineal tear.

Keywords: Perineal Tear; Striae Gravidarum.

Introduction

Around the globe, approximately 85% of women had perineal tear during child birth [1]. The perineal injury during child birth is very common which usually occurs to the skin and muscles between the vaginal introits and the anal. If left untreated it may lead to persistent problems in quality of life [2]. The laceration, resulted from episiotomies or spontaneous obstetrics tear have severe consequences including chronic perineal pain, dyspareunia, urinary problems, fecal incontinence, it also effect the physical and physiological well being of postpartum women [3]. A study shows that the prevalence of third and fourth degree perineal laceration ranged widely across countries like China, Cambodia, India and Philipines [4]. Predicting such scenario, the information collected during pregnancy by obstetricians and midwifery can reduce the risk of developing perineal tear.

Author Affiliation: Assistant Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

Corresponding Author: Liji Varghese, Assistant Professor, Chirayu College of Nursing, Bhopal, Madhya Pradesh 462030, India.

E-mail: liji1610lijo@gmail.com Received on 14.08.2018, Accepted on 17.09.2018 Striae, or stretch marks which are common complaints during pregnancy. They may affect abdomen, buttocks, thighs, breast, back, axilla and groin [5]. Women with good skin elasticity usually have no stretch marks and tends to have less perineal and vaginal tissue injury during child birth, while women with rigid skin flaccidity are more prone for severe perineal injury. Therefore, striae gravidarum or stretch marks during pregnancy can be used as a indicator for perineal laceration and their severity [6].

Straie Gravidarum

Straie gravidarum are atrophic linear scars that represent one most common connective tissue changes during pregnancy. It is an off-colour hue and diminishes over time. Striae gravidarum can cause emotional and psychological distress for many women. Striae usually occurs due to rapid expansion of the uterus, sudden weight gain during pregnancy, low maternal age, high body mass index and Macrosomic neonates. It is suggested that relaxin and estrogen combined with higher levels of cortisol during pregnancy can cause an accumulation of muocopolysaccharides, which increases water absorption of connective tissue, making it prime for tearing under mechanical stress [7]. Striae gravidarum is seen by changes in the structural connective tissue due to hormonal effect on the alignment and reduced elastin and fibrillin in dermis [8].

Clinically Striae appears in reddish or purple lesions on abdomen, breast, upper arms, back, thighs, hips, and buttocks. Strectch marks tend to be atrophic and lose pigmentation with time. It has been observed that striae gravidarum can be a indicator of poor skin elasticity. The ratio and formate of collagen in connective tissue are considered to determine the individual's elastic index [9].

In normal vaginal delivery ,the fetal head exerts significant pressure on the perineal tissue and vaginal vault. In many women the tissue tears easily even with small baby. Midwifes using many interventions to prevent perineal tear, but get unexpected outcomes [7].

Assessment of striae gravidarum score

The assessment of striae gravidarum can be done with the help of Atwal numeric scoring. This scale helps us to scores based on observation of four areas in which striae gravidarum is commonly observed on abdomen, hip, buttocks, and breast [10].

The scale comprises of the following criteria:

A) The number of striae gravidarum at each body site-

Scores	Number of striae
0	No striae sign
1	1-4 striae
2	5-10 striae
3	More than 10 striae

B) The colour of striae gravidarum which ranges from pale to purple

Scores	Colour
0	No
1	Pink
2	Dark red
3	Purple

The final scores for each body site relating to number and colour ranges from 0-6.

Accordingly the total striae score for all body sites ranges 0-24.

- Women having total striae score upto 12 = mild straie
- Women having total striae score upto 13-18= moderate straie

Women having total striae score more than 18=severe striae

With this scale the severity of peineal tear can be predicted.

Literature showing association between striae gravidarum score and perineal tear

Halperin O, Raz I, Ben-Gal L, Or-Chen K, Granot M. Conducted a study on Prediction of perineal trauma during childbirth by assessment of striae gravidarum score the main objective of the study was: To explore the association between striae gravidarum (SG) and the risk for perineal trauma (PT) in childbirth.A cross-sectional research design was adopted in maternity wards of five university medical centers the total sample size was 358 women above the age of 28 years old who delivered vaginally. Striae gravidarum score was assessed using the Atwal numerical scoring system. The association was examined between PT as the outcome measure, defined by tears or laceration, and the total striae scores (TSS) obtained at the abdomen, hips, buttocks, and breast. Results showed that there was Significantly higher TSS scores were found in women with PT compared with women without PT (3.60±0.39 vs. 2.31±0.23, p=.003). Specifically, striae scores at the breast and hips were significantly higher among women who had PT. Logistic regression analysis revealed that TSS (OR=0.079; 95% CI 1.012, 1.151; p=.021), as well as a rise in body mass index (BMI) during pregnancy (OR=1.025; 95% CI 1.001, 1.049; p=.043) are significant predictors of PT. This study demonstrates a significant relation between SG and PT. The findings suggest that SG assessment may be used in the clinical setting by midwives and nurses as a simple and noninvasive tool to better define women at risk for PT [11].

Wahman AJ, Finan MA, Emerson SC. (2000). Conducted a study on Striae gravidarum as a predictor of vaginal lacerations at delivery. A prospective observational study wa conducted to ascertain whether striae gravidarum could predict lacerations and their severity. The study included 168 women having vaginal delivery of infants who weighed more than 2,000 g. The absence or presence and degree of lacerations involving the perineum, vagina, labia, and periurethral regions were studied with a step-wise multivariate logistic regression analysis. Episiotomy was found to prevent spontaneous lacerations. Abdominal stretch marks were found to be statistically significant predictors of lacerations when controlling for episiotomy. Patients with striae gravidarum are at higher risk for lacerations at the time of vaginal delivery than patients who do not have abdominal stretch marks [12].

Kapadia S et al. Conducted a study with the objective to explore the association between striae gravidarum and the risk for perineal tear during childbirth. Three hundred patients delivered normally were included in this study. Striae gravidarum score was assessed using the Atwal numerical scoring system. The association was examined between striae and perineal tear as the outcome measure, defined by tears or laceration, and the total striae scores (TSS) was obtained. Results: Mean age was 25.41 years ranging from 20-30 years, mean gravidity was 2.27 ranging from 1-5, mean weight gain was 9.72 Kg ranging from 5-16 Kgs and average baby birth weight was 2.8 Kg ranging from 2.1-3.5 Kg. The only predictors of perineal tears that were found to be statistically significant in our study were Severity of striae gravidarum and Episiotomy given or not. In patients with moderate to severe striae there was tear i105 patients as compared to 45 patients with no or mild striae. 89 patients belonging to no or mild striae group delivered without any perineal tear whereas 61 patients in moderate to severe striae group delivered without perineal tear. It is observed that episiotomy has some protective effect against perineal tear [6].

Conclusion

From the available research reviews it is quite adherent that the occurrence of perineal tear can be assumed with striae gravidarum score. Thus, in obstetrical assessment striae score can also be included as a noninvasive tool while examing women during their last trimester of pregnancy. It is a simple observation method which can be easily followed by obstetricians and midwives in primary and tertiary health centers, and helps in deciding whether episiotomy to be given or not. Episiotomy as an intervention to avoid perineal tear is yet debatable [12]. But calculating striae score would definitely reduce risk of severe perineal tear and morbidity related to it.

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When Heart Kills Liver: Nutmeg Liver: Case Report

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Settepalli Jasmin Debora

Abstract

Congestive hepatopathy includes a spectrum of hepatic derangements that occur in the settings of Right heart failure. If there is subsequent hepatic fibrosis the term cardiac cirrhosis may be used. The timely diagnosis of a cardiac etiology of liver dysfunction is important because such dysfunction is potentially reversible if the underlying cardiac disease is treated before the development of frank cirrhosis. Below, we present a case of 18 years old adolescent girl who was incidentally found to have Atrial Septal defect. Abdominal USG revealed Nutmeg Liver. In this case report the literature will be discussed on cardiac events resulting in Nut Meg liver and its management.

Introduction: Congestive hepatopathy is also known as Nutmeg liver and chronic passive congestion of the liver, which is an liver dysfunction due to venous congestion, usually caused by congestive heart failure. The gross pathological appearance of a liver with Nutmeg is Speckled like a grated nut meg kernel [6]. Treatment is directed to remove the cause. So, therapy aimed at improving Right heart function. True nutmeg liver is usually second to left sided heart failure causing congestive right heart failure and the treatment options are limited [12].

Case Report: A 18 years old adolescent girl with a known atrial septal defect, cystichygroma in the left neck, presented to the cardiology department complaining of shortness of breath (grade IV), non productive cough, orthopnea, fatigue. On physical examination the findings were Tachypnea, cold extremities and bibasilar crackles on pulmonary auscultation; An abdominal ultra sound was requested and the findings were congestive hepatopathy, splenomegaly minimal left pleural effusion and moderate volume of ascities. X-ray showed cardiomegaly obliterating left CP angle, patchy air space opacities, right mid zone and lower zone pulmonary edema changes. 2D Echo cardiogram showed cyanotic heart disease, Large oss with atrial septal defect with predominantly left to right shunt, dilated right atria, right ventricle& pulmonary artery; severe tricuspid regurgitation with moderate pulmonary artery hypertension, Right ventricular dysfunction with moderate atrial regurgitation; mild pulmonary edema, global hypokinesia of left ventricle, mild left ventricle systolic dysfunction.

Conclusion: The study highlight cardiac cause should be thought for differential diagnosis when patient presents with liver cirrhosis; the incidence of patients with Nutmeg liver are presenting in general practice.

Keywords: Congestive Hepatopathy; Right Heat Failure; Atrial Septal Defect; Nut Meg Liver; Congestive Heart Failure; Liver Dysfunction; Cirrhosis of Liver.

Introduction

Congestive hepatopathy is also known as Nutmeg liver and chronic passive congestion of the liver, which is an liver dysfunction due to venous congestion, usually caused by congestive

Author Affiliation: Professor, Dept of Medical Surgical Nursing, NRI College of Nursing, Chinakakani, Guntur, Andhra Pradesh 522503, India.

Corresponding Author: Settepalli Jasmin Debora, Professor, Dept of Medical Surgical Nursing, NRI College of Nursing, Chinakakani, Guntur, Andhra Pradesh 522503, India.

E-mail: debbisjd@gmail.com Received on 27.09.2018, Accepted on 11.10.2018 heart failure, The gross pathological appearance of a liver with Nutmeg is Speckled like a grated nut meg kernel; The dart spots represent the dilated and congestive hepatic venules and small hepatic veins; long standing hepatic congestion can lead to fibrosis , if the cause is right heart failure it is called cardiac cirrhosis [7,8]. USG, Doppler studies of the portal and hepatic arteries and veins; ECG and Echo cardiogram are useful tools to detect hepatic congestion and assess fibrosis; MRI MR elastrography are understudy [5]. In ascities cases paracentesis should be done and high protien in ascitic fluid reflects rupture of hepatic lymphatic system. A marked elevated serum N-terminal pro BNP level distinguished ascities due to heart failure from ascities related to cirrhosis. Improvement

in liver biochemical tests with treatment of the underlying cardiac conditions provides support for diagnosis [6]. Treatment is directed to remove the cause. So, therapy aimed at improving Right heart function. True nutmeg liver is usually second to left sided heart failure causing congestive right heart failure and the treatment options are limited [12].

Case Report

A 18 years old adolescent girl with a known atrial septal defect, cystichygroma in the left neck, presented to the cardiology department complaining of shortness of breath (grade IV), non productive cough, orthopnea, fatigue. On physical examination the findings were Tachypnea, cold extremities and bibasilar crackles on pulmonary auscultation: signs and symptoms of decompensate CHF prompted further evaluation with 2D Echo cardiogram which showed cyanotic heart disease, Large oss with atrial septal defect with predominantly left to right shunt, dilated right atria, right ventricle & pulmonary artery; severe tricuspid regurgitation with moderate pulmonary artery hypertension, Right ventricular dysfunction with moderate atrial regurgitation; mild pulmonary edema, global hypokinesia of left ventricle, mild left ventricle systolic dysfunction. An abdominal ultra sound was requested and the findings were congestive hepatopathy, splenomegaly minimal left pleural effusion and moderate volume of ascities. X-ray showed cardiomegaly obliterating left CP angle, patchy air space opacities, right mid zone and lower zone pulmonary edema changes.



Fig. 1: Physiological Anatomy of Liver



Fig. 2: Percentages of Symptoms and Signs in Nutmeg Liver

Blood test revealed elevated total bilirubin levels (3.9 mg/dl), direct bilirubin 1.7 mg/dl, indirect bilirubin 2.2mg/dl, SGPT 13 U/L, serum albumin 2.9gm/dl, globulin 5.1gm/dl, raised total iron binding capacity 387 µgm/dl, serum iron 42µg/ dl, serum ferratin 10.94ng/ml, with Hb-6.0gm/dl, serum sodium level as 129 mmol/lit. Prothrombin concentration - 71.6%, International Normalized Ratio 1.46. The client was diagnosed as Nutmeg liver which is also called as congestive hepatopathy. Accordingly the patient was placed on symptomatic treatment T.frusalac 40 mg, T.lanoxin 0.25mg, T. augmentin 625 mg, T.somfral 40 mg, Syr. Ascoril 5mg, T Motar LC, T Abflo 100 mg. comprehensive Nursing care was carried as per the needs and priorities by using nursing process.

Discussion

Liver is a largest solid organ, weighing approximately 3lb (1500 gms), located in the right upper quadrant, beneath the diaphragm. liver consists of three lobes divided in to eight independent segments, each of which has its own vascular in flow, out flow and biliary drainage, because of this division into self contained units, each can be resected without damaging those remaining.

Right lobe: Anterior (segments V and VIII) and posterior (segments VI and VII).

Left lobe: medial (segment-IV) and Lateral (segments II and III); the left lobe extends across the midline in to the left upper quadrant;

Caudate lobe: (segment-I)

Microscopically the liver consists of functional units called lobules composed of portal triads in which the bile ducts, hepatocytes and artery are located. The portal triads are then bounded by sinusoids and a central vein. Across section of a classic lobule or acinus is hexagonal. Blood supply derived from both artery and vein. 25% of cardiac output flows through the liver per minute. portal vein (after draining the mesenteric vein and pancreatic an splenic veins) and hepatic artery (off the aorta via the celiac trunk) enter the liver at the porta hepatis or hilum (a horizontal tissue in the liver containing blood and lymph vessels, nerves and the hepatic ducts). 75% is supplied by the portal vein; each segment receives a branch of the portal vein and 25% is supplied by the hepatic artery. Blood from both portal and hepatic artery mixes together in the hepatic sinusoids and then flow through hepatic vessels. Venous drainage begins in the central veins in the center of the lobules; central veins empty in to the hepatic veins, which empty in to inferior vena cava.

The incidence of congestive hepatopathy, significant fibrosis or cardiac cirrhosis ranges between 15%-65% of patients with significant heart failure. By today's accounts cardiac cirrhosis is rare [1].

Pathophysiology alteration as Increased pressure in the sub lobular branches of the hepatic veins causes an engorgement of venous blood, and is most frequently due to chronic cardiac lesions, especially those affecting the right heart, the blood being dammed back in the inferior vena cava and hepatic veins. central regions of the hepatic lobules are red brown and stand out against the non congested, tan colored liver, Centrilobular necrosis occurs [5,6].

Macroscopically, the liver has a pale and spotty appearance in the affected areas, as stasis of the blood causes pericentral hepatocytes to become deoxygenated compared to the relatively better oxygenated peri portal hepatocytes adjacent to the hepatic arterioles. This retardation of the blood also occurs in lung lesions, such as chronic interstitial pneumonia, pleural effusions and intra thoracic tumors [6,8].

Clinical manifestations depend largely up on the primary lesions giving rise to the condition. In addition to the heart or lung symptoms, there will be a sense of fullness and tenderness in the right hypochondric region. Gastro intestinal catarrh is usually present, and vomiting of blood may occur [2]. There is usually more or less jaundice owing to portal obstruction, ascities occur, followed later by generalized edema. The stools are light or clay colored, and urine is colored by bile. On palpation hepatomegaly, tenderness extending several inches below the costal margin of the ribs [3,4].

Term cardiac cirrhosis denotes any type of hepatic fibrosis occurring in cardiac patient. Our case report is in agreement with the previous observations of chronic liver injury due to long term congestive heart failure [9]. Though the incidence of cardiac cirrhosis is low but causes are same like Ischemic heart disease, Cardiomyopathy, Valvular heart disease, Primary lung disease, Pericardial diseases. Incidence of valvular heart disease decreased with increased incidence of, cardiomyopathy as an etiology of cardiac cirrhosis [9,10]. Our case had presented with shortness of breath (grade IV), non productive cough, orthopnea, fatigue. On physical examination the findings were Tachypnea, cold extremities and bibasilar crackles on pulmonary auscultation. On evaluation the cause was cyanotic heart disease, Large oss with atrial septal defect predominantly with left to right shunt, dilated right atria, right ventricle & pulmonary artery; severe tricuspid regurgitation with moderate pulmonary artery hypertension, Right ventricular dysfunction with moderate atrial regurgitation; mild pulmonary edema, global hypokinesia of left ventricle, mild left ventricle systolic dysfunction leading to chronic congestive heart failure. This further leads to passive congestion and relative ischemia due to poor circulation eventually leading to necrosis and fibrosis of liver predominantly of centrilobular region [11,12]. Chronic congestive heart failure established on long history of 6 years for which treatment was consumed of which records were not available. Deranged Liver Function Test with markedly increased bilirubin levels and SGPT. Metabolic and synthetic functions of liver were also compromised evident from decreased serum albumin and deranged PT/INR.

The cornerstone of management of all forms of congestive hepatopathy from asymptomatic mild elevations in hepatic indices to cardiac cirrhosis is targeted toward treating the underlying cardiac function and any triggers accounting for acute decompensation jaundice, hepatic congestion and ascities may respond dramatically to therapy with diuretics; however these drugs should be used with caution to avoid dehydration, hypotension and hepatic ischemia by precipitating zone 3 necrosis [1,2]. It is of vital importance to maintain an adequate cardiac output. Our case was treated symptomatically; Serial large volume paracentesis can relieve symptoms in those with diuretic refractory tense cardiac ascities, but overtime can lead to protein loss and exacerbate the protein malnutrition commonly seen in those with advanced heart failure [1,3]. Trans jugular intra hepatic Porto systematic shunts or peritoneal venous shunts are contraindicated in this population as they can lead to exacerbation of the underlying heart failure [2]. Cautious use of anticoagulants is advised because patients have a baseline mild increase in PT/INR and are especially sensitive to warfarin and other related compounds. Inpatients refractory to medical therapy who are suitable operative candidates both LVAD implantation have been shown with the failing heart, In patients with established cirrhosis, combined heart and liver transplant is a feasible option. Recently, there has been a report of possible reversal of cardiac cirrhosis with heart transplantation alone, effectively removing the source of the insult. However, such cases are the expectation [2,3].

Classically Nursing Management for Nut Meg liver or cardiac cirrhosis focus on goals such as optimizing remaining liver function, stabilize decompositions and collaborating professionals in health care team. The anticipated patient trajectory with chronic liver failure may plateau prior to decompensation then deteriorate rapidly. Patients may be expected to have needs in the following areas. Development of orthostatic hypotension dictates the need for slow deliberate movements to prevent dizziness and falls; Skin will be dry, there will be an increase in bruising due to reduction of the platelet count and levels of coagulation factors. Our case presented with orthostatic hypotension and dry skin was noted which were handled by nursing interventions such as careful awakening, Elevate the head of the bed (reducing nocturia), Drink two cups of cold water 30 minutes before arising and Shift from supine to an erect position in gradual stages; Treated Anemia, avoided physical exertion, advised not to stain during micturation or defecation, not to consume heavy carbohydrate meal to avoid exacerbation of symptoms.

Ascites may cause early satiety; low zinc levels in liver disease may result in diminished taste or metallic taste; patients develop severe muscle wasting and malnutrition. In our patient minimal ascities and severe muscle wasting was appreciated, so, encouraged to consume small and frequent feeds. Depressed immune system increases the risk of infection; presence of ascities creates the risk of peritonitis. Psycho social issues as chronicity of the situation will have profound impact on the family unit and increase stress; depression can occur in both patient and primary care giver. Ethical issues such as lack of available organs and prolonged hospitalizations increase the risk of sepsis, which prevents transplantation and leads to discussions of with drawl of life support. Discharge planning is vital because recovery periods are short and re hospitalization can be frequent as the patient decompensate. Family and patient needs assistance with home care, rehabilitation, medications, office visits.

Over time, hepatic function typically remains stable and even when cardiac cirrhosis and ascities ensure, patients with congestive hepatopathy rarely develop other features of hepatic insufficiency. Several studies have addressed the prognostic importance of liver function abnormalities as predictors. Batin etal demonstrated that the greatest prognosticators in CHF were AST and total Bilirubin [1].

Conclusion

A patient with ASD with LV dysfunction developing chronic right sided heart failure due to pulmonary hypertension causes passive congestion on hepatic veins leading to relative ischemia and eventually to hepatic necrosis and fibrosis and raised portal hypertension [9]. The study highlight cardiac cause should be thought for differential diagnosis when patient presents with liver cirrhosis; the incidence of patients with Nutmeg liver are presenting in general practice. It is important that nurses understand the common causes, pathophysiological alterations, clinical manifestations and complications of cardiac cirrhosis as well as the complexities of patient management, and should assess the need, prioritize, prevent the complications and restore liver function, stabilize decompensation with collaboration of health team and provide high quality care for the clients with cardiac hepatopathy.

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Conflict of Interest

No conflict of interest

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Subject Index

Title	Page No.
A study to Assess the Knowledge and Attitude Regarding Infertility among	
Teenagers Studying in Selected College of Ahmednagar	45
Clinical Profile and Outcome of Patients with Organophosphorus Poisoning	
Admitted at Pravara Rural Hospital, Loni (Bk): A Prospective Study	37
Depression as Co-Morbidity among Diabetes Patients in India: An Increasing Disease Burder	ı 75
Effect of Structured Teaching Program on Knowledge Regarding Shaken	
Baby Syndrome among Caregivers of Infants	49
Effectiveness of Modified Early Ambulation on Activities of Daily Living,	
Functional Activity and Psychological Wellbeing among the Patients Undergone	
Abdominal Surgery	89
Effectiveness of Self Instructional Module on Knowledge and Practice	
Regarding use of Defibrillator among Staff Nurses	59
Effectiveness of Simulated Demonstration on Knowledge and Skill Regarding	
Cardiac Defibrillation among Nursing Professionals	41
Effects of Skipping Breakfast among Student Nurses	73
Knowledge, Attitude and Practice of Hospital Infection Control and Prevention among	
Nursing Faculty Attached to Medical College Hospitals of Central Karnataka	7
Peripherally Inserted Central Catheter (PICC)	14
Postoperative Complication of Cataract Surgery	23
Revolution in Nursing	69
Severity Scoring Systems in Intensive Care: A Clinical Review	18
Striae Gravidarum Score - An Indicator To Anticipate Perineal Tear During Child Birth	101
Study to Assess the Effectiveness of STP on Knowledge of Mothers Regarding	
Safe Food Practices in Selected Hospitals, Uttrakhand	55
Triage Awareness among Nursing Students	5
Vascular Access- Hemodialysis	99
When Heart Kills Liver: Nutmeg Liver – Case Report	105

Author Index

Name	Page No	Name	Page No
B. T. Basvanthappa	89	Nilesh Mhaske	45
Bhagavan. B.C	89	P.V. Ramachandran	89
David Pascaline J.	59	Periannan	89
Dhobale Pallavi B.	59	Pinky Antony	49
Diksha Harbola	55	Pramilaa. R	69
Hrishikesh Dilip Gore	41	Pratibha Deepa	55
I. Clement	89	Priyanga	5
Jeevanajyothi	73	Rajendra Lamkhede	41
Kalaiarasan	73	S. Sridevy	5
Kanimozhi	69	S. Sridevy	73
Kanmani	69	Seema Varghese	99
Karthikeyan	73	Settepalli Jasmindebora	105
Kiran L.J.	7	Shatrughan Pareek	75
Lakshika Tewari	55	Shilpa Kulkarni	45
Lata Bisht	55	Sukare Lata V.	59
Liji Varghese	101	T. Sivabalan	37
M. Sudha Devi	14	T. Sivabalan	41
M. Sudha Devi	23	Thamarai Selvi. P	55
Narendra Kumar Kaushik	75	Venu A.S.	7
Neethu Jose	18	Vinayak Raosaheb Gunjal	37

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