RESEARCH PAPER | Medical Science | Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X

The Effect of Transparent Film Dressing Vs Pressure Dressing on Prevention of Bleeding and Discomfort Among Patients Underwent Coronary Angiography

KEYWORDS: Pressure, transparent, film, dressing, bleeding, discomfort

Loveleen
MSc. Medical Surgical Nursing (Batch 2011-13) Dayanand Medical College of Nursing, Ludhiana, Punjab.

Dr. Suresh. K Sharma
MSc. N, PhD Professor & Vice Principal Dept. of Medical Surgical Nursing College Of Nursing, DMC & Hospital, Ludhiana.

Dr. G. S. Wander
MD, DM Professor & Head Dept. of Cardiology DMC & Hospital, Ludhiana.

Mr. Anurag Bhai Patidar
Lecturer Dept. of Medical Surgical Nursing College of Nursing, DMC & Hospital, Ludhiana.

ABSTRACT ***Background:*** *After coronary angiography, pressure dressings have been used as the standard dressings following femoral sheath removal in many institutions. Patients complain about pain while dressing removal and skin discomfort due to dressing. Objective: The objective of the present study was to compare the incidence of bleeding and discomfort with transparent* film dressing vs pressure dressing among patients underwent coronary angiography. Methods: This randomized control trial was conducted during months of December, 2012 to January, 2013 in cath CCU and ICCUs of HDHI, Ludhiana. A total of 130 consecutive patients were randomly assigned to two groups: pressure dressing (65) and transparent film dressing group (65). Data was collected with the help of interview schedule, observation and checklist for dressing complaints. Results: Findings of the study revealed that mild pain during dressing removal was felt by 15.4% of the patients with transparent dressing in comparison to 60% of the patients with pressure dressing (p=0.000). Present study also revealed that feeling of pulling beneath the dressing was only present in patients with pressure dressing i.e. 83.1% (p=0.000). Pain on removal of dressing was experienced by two third of the patients (64.6%) of pressure dressing group and only 15.4% of the patients of transparent dressing group (p=0.000). Further it shows that none of the patients had bleeding complications among both the groups. Conclusion: The use of transparent film dressing significantly reduced the pain and skin discomfort of the patients as compared to pressure dressing.*

Introduction

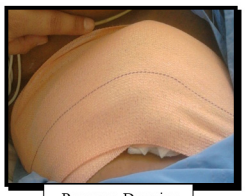
Potential complications after removal of femoral sheath are bleeding, haematoma, pseudoaneurysm, arteriovenous fistula, neuropathy and arterial occlusion.[1] A firm pressure is applied to control the puncture site complications after femoral sheath removal and then a dressing is applied over it. Pressure dressings have been used as routine practice in many institutions as the use of pressure dressing prevented bleeding complications after femoral sheath removal. But many patients have memories of skin discomfort due to pressure dressing like pain, feeling of pulling beneath the skin, discoloration, rash, peeling off, blisters and skin irritation. Pulling force to leg due to pressure dressing also makes patient's sleep difficult at night. These complaints look minor but still became the reason for the patient's serious skin discomfort.[2]

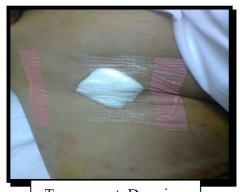
Only two studies were found that addressed the issue of dressing type after coronary angiography. In the first study, Boonbaichaiyapruck S et al. (2001, Thailand) compared a light transparent dressing with conventional pressure dressing after cardiac catheterization. Dressing of the puncture site with tegaderm was more comfortable than the conventional pressure dressing without any difference in bleeding complications.[3] In the second study, Mcle S et al. (2009, West Virginia) compared three types of dressings after coronary angiography i.e. transparent dressing, pressure dressing and adhesive bandage. This study concluded that transparent film dressing and adhesive bandage dressing were more comfortable with less pain than pressure dressing. So, the use of pressure dressing was discontinued for all cardiac catheterization patients in their institution.[2]

Materials and Methods

This randomized control trial was conducted in cath CCU and ICCUs of HDHI, Ludhiana during months of December, 2012 to January, 2013. It is 171 bedded super specialty unit of DMC and Hospital. [4] A total of 130 consecutive patients who underwent coronary angiography were randomly assigned to two groups: transparent dressing (65) and pressure dressing group (65). Tool for data collection consisted of four parts: Interview schedule for socio-demographic data, clinical angiography profile sheet, observation sheet and checklist for dressing complaints. Pain was assessed using Numeric Pain Rating Scale while dressing was in place, during and after removal of dressing (upto 24 hours). External bleeding was assessed by direct observation of gauze sponges, secured at the site below the dressing at 6, 12 and 24 hours after application of dressing. Haematoma was measured at 6, 12 and 24 hours after application of dressing using structured haematoma scale. Patients were assessed for experience of any type of pulling, skin irritation, mild discoloration, hardness, peeling off, itching, discomfort, anticipating pain on removal & any other complaints at the dressing site from the time of application of dressing till 48 hours after dressing removal using checklist method. The data was analyzed and presented by using descriptive and inferential statistics.

Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X


Pressure Dressing


Transparent Dressing

Results

Findings of the study revealed that pain and skin discomfort were significantly reduced in patients of transparent dressing group as compared to pressure dressing group. None of the patients of both the groups had any bleeding complaints.

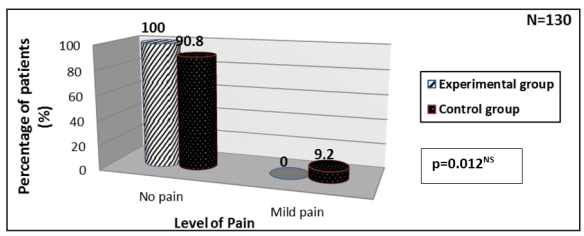
Table 1: Socio-demographic profile of the patients N=130

Socio-demographic Characteristics	Exp. Group (n=65) f (%)	Control Group (n=65) f (%)	Total (N = 130) f (%)	χ^2 statistics
Age in Years				
40 – 49	15 (23.1)	07 (10.8)	22 (16.9)	χ^2 value=4.242
50 – 59	23 (35.4)	22 (33.8)	45 (34.6)	d.f. =3
60 – 69	19 (29.2)	26 (40.0)	45 (34.6)	p= 0.236^{NS}
> 70	08 (12.3)	10 (15.4)	18 (13.8)	
Body Mass Index				
Underweight	03 (04.6)	01 (1.50)	04 (3.10)	χ^2 value=3.201
Normal	33 (50.8)	29 (44.6)	62 (47.7)	d.f. =3
Overweight	25 (38.5)	26 (40.0)	51 (39.2)	p= 0.362^{NS}
Obese	04 (06.1)	09 (13.8)	13 (10.0)	
Gender				χ^2 value=2.588
Male	57 (87.7)	50 (76.9)	107(82.3)	d.f. =1
Female	08 (12.3)	15 (23.1)	23 (17.7)	p= 0.108^{NS}
Habitat				χ^2 value=0.300
Rural Urban	22 (33.9)	25 (38.5)	47 (36.2)	d.f. =1
	43 (66.1)	40 (61.5)	83 (63.8)	p= 0.584^{NS}
Life style				χ^2 value=9.344
Sedentary	24 (36.9)	16 (24.6)	40 (30.8)	d.f. =2
Moderate	17 (26.2)	34 (52.3)	51 (39.2)	p= 0.009^{NS}
Active	24 (36.9)	15 (23.1)	39 (30.0)	

NS Non significant (p>0.01)

Table 1 depicts the socio-demographic profile of the patients. Both the groups were homogenous (p>0.01). In experimental group, less than two third of the patients (42; 64.6%) were in age group of 50-69 years while in control group, more than two third of the patients (48; 73.8%) were in age group of 50-69 years. Half of the patients of experimental group (33; 50.8%) were of normal BMI whereas in control group, less than half of the patients (29; 44.6%) were of normal BMI. Most of patients in experimental group (57; 87.7%) and control group (50; 76.9) were male. Further it shows that more than two third (43; 66.1%) of patients of experimental group were residing in urban area and in control group, slightly less than two third (40; 61.5%) of patients were residing in urban area. Equal number of patients of experimental group were living with sedentary (24; 36.9%) and active life style (24; 36.9%). Whereas in control group, more than half of the patients i.e. 34 (52.3%) were living with moderate life style.

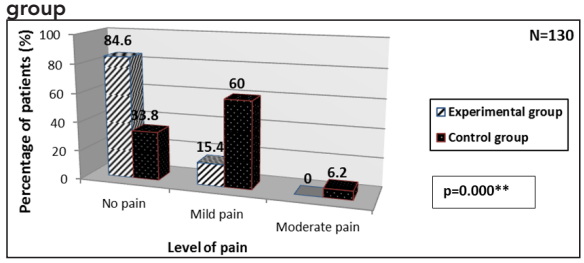
Figure 1: Comparison of level of pain while dressing was in place among patients of experimental and control group



NS Non significant

Figure 1 depicts the comparison of percentage distribution of patients according to level of pain while dressing was in place in experimental and control group. It shows that while dressing was in place, only 6 (9.2%), almost one tenth of the patients of control group felt mild pain.

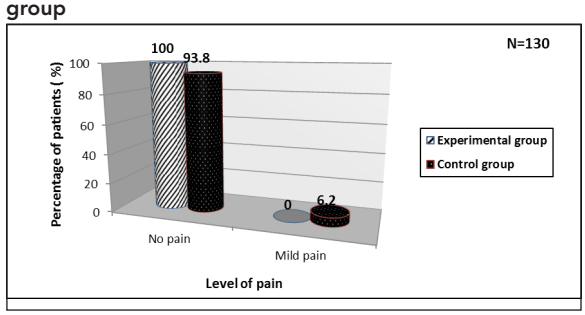
Figure 2 : Comparison of level of pain during dressing removal among patients of experimental and control group



** Highly Significant at p<0.01

Figure 2 illustrates that during dressing removal, 10 (15.4%) of patients experimental group felt mild pain. Among control group, more than half of the patients i.e. 39 (60%) felt mild pain, and only a few of patients, 4 (6.2%) felt moderate pain. Rest of the patients did not felt any pain.

Figure 3: Comparison of level of pain after dressing removal among patients of experimental and control group



NS Non significant

Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X

Figure 3 depicts comparison of percentage distribution of patients according to level of pain after dressing removal in experimental and control group and it represents that only in control group, a few of the patients i.e. 4 (6.2%) felt mild pain after dressing removal.

Figure 4 : Comparison of bleeding and hematoma among patients of experimental and control group

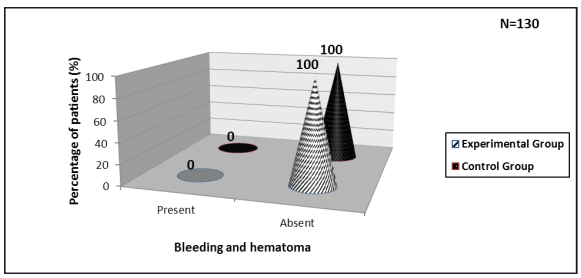


Figure 4 depicts percentage distribution of patients with bleeding and hematoma among experimental and control group. It shows that none of the patients had any bleeding complications in both experimental and control group.

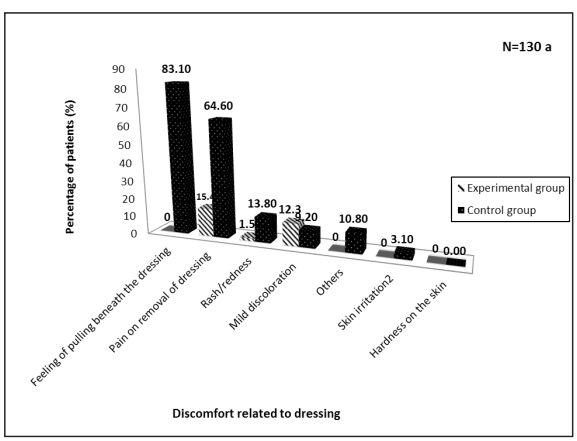


Figure 5 : Comparison of discomfort related to dressing among patients of experimental and control group
[a]Subjects have multiple complaints

Figure 5 depicts that Complaint like feeling of pulling beneath the dressing was only present in patients of control group i.e. 83.1% (p=0.000**). More than half of the patients (42; 64.6%) in control group complained of pain on removal of dressing while in experimental group only 10 (15.4%) patients complained of pain on removal of dressing (p=0.000**). Skin irritation was only present in patients of control group i.e. 3.1%. Redness was present in 13.8% of patients of control group while in experimental group, 1.5% of the patients were presented with redness. Further, data shows that mild discoloration was present in 9.2% patients of control group and 12.3% of experimental group. Among 10.8% of control group, other dressing complains were also present which mainly includes difficulty in sleeping at night due to pulling force of dressing and difficulty in removing the dressing.

Discussion

According to the findings, while dressing was in place and after dressing removal, none of the patients of experimental group experienced any pain but 9.2% and 6.2% patients of control group experienced mild pain respectively. During dressing removal, 15.4% patients of experimental group felt mild pain and among control group, 60% felt mild pain, and 6.2% felt moderate pain.

Similar findings of a comparative study were presented by Mcle S et al. (2009, West Verginia) that 12% in pressure dressing group and 3% in adhesive bandage group felt anticipating pain during dressing removal while none of patients of experimental group felt any pain**.** This was further supported by Boonbaichaiyapruck S et al. (2001, Thailand) that 49 % patients in the pressure dressing group experienced more pain as compared to transparent dressing group i.e. 26.9 %.

In present study, none of the patients of both the groups had any bleeding complaints.

Similar findings were presented by Mcle S et al. that no bleeding complications occurred in transparent film or adhesive bandage dressing groups, but 2 complications occurred in the pressure dressing group. This was further supported by Boonbaichaiyapruck S et al. that 4.7 % in the pressure dressing group and 1.6 % in the transparent dressing group developed haematoma.

Present study also revealed that complaint like feeling of pulling beneath the dressing was only present in patients of control group i.e. 83.1% (p=0.000**). More than half of the patients (42; 64.6%) in control group complained of pain on removal of dressing while in experimental group only 10 (15.4%) patients complained of pain (p=0.000**). Skin irritation was only present in patients of control group i.e. 3.1%. Redness was present in 13.8% of patients of control group and 1.5% of the patients of experimental group. Further, data shows that mild discoloration was present in 9.2% patients of control group and 12.3% patients of experimental group which could be because of lack of continuous pressure on transparent dressing site. Hardness on the skin was absent in both the groups. Among 10.8% of control group, other dressing complains were also present which mainly includes difficulty in sleeping at night due to pulling force of dressing and difficulty in removing the dressing.

Findings of the study are consistent with the results of a comparative study conducted by Mcle S et al. that 79% of patients with pressure dressing had one or several complaints about the groin site, only 3% of patients in the transparent dressing group had a complaint and 9% in the adhesive bandage group had complaints. Similar findings were presented by Boonbaichaiyapruck S et al. that pressure dressing group (55.5 %) reported more discomfort as compared to transparent dressing group (11.1 %).

Results were found to be statistically significant in favor of the use of transparent film dressing in preventing pain and skin discomfort rather than pressure dressing (p<0.01).

Conclusion

The major findings of the study revealed that none of the patients of both pressure dressing and transparent film dressing group had any bleeding complications. The present study highlighted that more pain was experienced among patients of pressure dressing group as compared to transparent film dressing group. Discomfort related to dressing was reported more in patients with pressure dressing as compared to transparent film dressing.

Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X

REFERENCE

1. Dr. Robson HR. Patient. co. uk. Health Information: coronary angiography. Available at http://www.patient.co.uk/health/coronary-angiography. Accessed on March 5, 2013. | 2. Macle S et al. Transparent film dressing vs. pressure dressing after percutaneous transluminal coronary angiography. American Journal of Critical Care. 2009; 18(1):14-2. Available from: http://ajcc.aacnjournals.org/content/18/1/14.full. | 3. Boonbaichaiyapruck S et al. Groin dressing after cardiac catheterization. Comparison among light dressing with thin transparent tape (Tegaderm) and conventional tight/pressure dressing and elastic adhesive bandage (Tensoplast). Journal Medical Association of Thai. 2001; 84(12): 1721–1728. Available from: http://www.ncbi.nlm.nih.gov/pubmed/11999819. | 4. Dayanand Medical College and Hospital. Unit- Hero DMC Heart Institute. Home: Introduction. Available at http://www.herodmc.com/introduction.asp. Accessed on March 7, 2013.