



A Clinico - Epidemiological Study of Acute Pyogenic Hand Infections – Retrospective Study of 50 Cases

Authors

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Introduction

The importance of hand in human life is unimaginable. From an evolutionary aspect, our hands were relieved from duties of locomotion when we became bipeds. Many of our mental processes are developed by feeling and movements of hand.

The hand is composed of tough material together with a machinery of much refinement and tissues of great delicacy and specialization. The hand infiltrated and gutted by infections create several problems. After the tissues have sloughed out and the storm of infection is over, all the tissues contract and movable parts become bound with a cicatrix. Much of this complications can be prevented by early treatment of infection. As anywhere else, prevention is better than reconstruction of a frozen hand which requires specialized technique, place and person.

Materials and Methods

The aim of the study was to know the pattern of acute pyogenic hand infection in relation to age, sex, etiology, occupation, type of treatment and complication if any.

This retrospective study was done at caritas hospital, Kottayam Kerala from 1-1-2008 to 3-12-

2010 by reviewing the case files. The present study consists of 50 cases of acute pyogenic infection. All were treated either by conservative treatment or by incision and drainage.

Observations

The study of 50 cases of acute pyogenic hand infections were carried out. The results are analyzed in a tabulated form.

Table 1: Symptoms and Sign

Symptoms and Sign	No. of cases	Percentage
Pain	50	100%
Swelling	50	100%
Fever	20	40%
H/O Trauma	18	36%
Local rise of temp	50	100%
Tenderness	50	100%
Dorsal oedema	31	62%
Pus discharge	10	20%
Regional adenitis	03	6%
Diabetes mellitus	04	8%
Vascular insufficiency	01	2%

Table 2: Duration of Symptoms

Duration of Symptoms in days	No. of cases	Percentage
1-3 days	30	60%
4-7 days	18	36%
8-10 days	02	04%

Table 3: Sex distribution

Sex	No. of cases	Percentage
Male	28	66%
Female	22	44%

Table 4: Age of the patients

Age of the patients	No. of cases	Percentage
00-10	08	16%
11-20	13	26%
21-30	10	20%
31-40	11	22%
41-50	03	06%
51-60	04	08%
61-70	01	02%

Table 5: Occupations of the patients

Occupations of the patients	No. of cases	Percentage
Manual laborer	14	28%
Factory work	12	24%
House work	14	28%
Study	08	16%
Pan business	02	04%

Table 6: Site of infection

Site of infection	No. of cases	Percentage
Terminal pulp space	10	20%
Middle volar space	07	14%
Proximal volar space	01	02%
Web space	10	20%
Subcuticular	01	02%
Thenar space	04	08%
Deep palmar space	02	04%
Radial bursa	01	02%
A/C Paronychia	01	02%
Dorsal subcutaneous	02	04%
Cellulitis	04	08%
combined	07	14%

Table 7: Single/Combination Antibiotics

Antibiotics	Number of patients
Single	06
Combination	44

Table 8: Complications:

Complications	No. of cases	Percentage
No complications	43	86%
Recurrence	02	04%
Restriction of movement after 1 month	03	06%
Osteomyelitis of terminal phalanx	02	04%

Discussion

Hand infections and injury are getting more and more importance, because of the utmost importance of hand in all fine work. Maintenance

of the normal movement and normal sensation is the basic aim behind changes in treatment methods of hand infection. The anatomy of hand plays a crucial role in planning the treatment of hand infections.

In Russia^[19] approximately 20% surgical outpatient report with disability of the hand with 25% of this are due to paronychia.

In the present study 50 cases of acute pyogenic infection of hand are included. The chronic infection and post-operative infection were excluded from the study.

All the patients under study presented with pain, swelling, local rise of temperature and tenderness. 31 patients had dorsal oedema explained by the fact that all lymphatics of hand transverse through the dorsum and dorsal skin is lax^[3,11].

Infection is introduced into hand compartments by direct injury and spread from other compartments. In this study the history of trauma was elicitable positively in only 36% of patients, probably because majority of the patients are manual laborer and housewives who are likely to neglect trivial trauma, which may be sufficient to cause an infection. Four patients had diabetes mellitus 2% had vascular in suffering due to raynods all of which are known risk factors^[18]. The duration of symptoms was less than 4 days in 30 out of 50 patients. This is because the pus present under tension in the localized spaces of the hand produces severe early local symptoms^[16]. In our study there is no remarkable difference in incidence of hand infections in males and females. This might be because, majority of females are laborer or house workers, predisposing them to trauma and infections. Regarding the age incidence 26% of patient were from 11-20 years and 20% of 21-30 years age group accommodating roughly 50 % of patients under study.

Manual laborer, factory worker and house wives contribute the 75% of the patients proving trauma is an important etiological agent. Regarding the site of infection 36% of patient had finger infection and web space infection in 20% of patients. Some finding is noted by micheal R.^[18].

Acute paronychia although noted by some as a very common infection of the hand^[18,15,11] was found only in 2% of the present series, as majority of these patients are treated with surgery in outpatient department, which this study has not included. According to Micheal R.^[18] the organisms are the descending order, staphylococcus aureus, methicillin, resistant staphylococcus, streptococci, gram negative bacteria and anaerobes which vary with site of infection and mode of injury.

Of the 50 patients under study 46 needed surgical intervention, 4 patients were treated conservatively (of cellulitis) with high doses of crystalline penicillin and cloxacillin). It is well known that conservative treatment will effect a cure only in a few cases and under specific condition^[4].

Such success is unlikely if the patient presents after 48 hours of onset of infection because of certain anatomical peculiarity of hand and blood supply^[10,3].

Recurrence in two patients were due to inadequate drainage at the time of primary operation, 3 patients had restriction of movement at the end of 1-month follow-up. They were subjected to active physiotherapy by the specialist, and 95% of mobility was regained.

Summary and Conclusion

This study involve 50 cases of acute pyogenic hand infections admitted caritas hospital from January 2008 to December 2010.

- 1) The incidence of hand infection is higher in the age group 11-30 years.
- 2) The male population is affected more than the females.
- 3) The most common affected area is fingers, followed by web spaces. Deep space infections are comparatively rare.
- 4) The commonest microorganism responsible is staphylococcus aureus, followed by streptococcus.
- 5) Manual laborer and house wives are more affected.

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