Abstract:
This study reports four cases of crush-avulsion injury to the thumb at different levels presented at our Plastic and Reconstructive surgery Department. All of the patients were male with injuries to the thumb with non-replantable amputations. Distal phalanx or proximal phalanx, or both, were used as a free cortical bone graft. The amputated part was skeletonized without the periosteum attached to the cortical bone of the phalanx fixing it to the stump and covering it by tubed pedicle flap and neurovascular island sensate flap. The results were functionally and cosmetically good.

Keyword: Thumb reconstruction, amputated skeleton, tubed pedicle flap

Introduction:
The thumb is the most important digit for the pinch and grasp function of the hand. It contributes approximately 40% of hand function.

Effort should be done to replant or reconstruct amputated thumbs to regain hand function. Development in microsurgical techniques changes the strategy of management of thumb amputations other modalities of reconstruction of non-replantable amputations still working. Factors taken in consideration in selecting surgical options include: age, sex, occupational demands, mechanism of injury, condition of the amputated part and objective needs of the patient. The functional requirements of the thumb are adequate sensibility, sufficient length and mobility, freedom from pain.

Aim
Immediate staged reconstruction in non-replantable injury of thumb, using bone graft from amputated thumb with tubed pedicle flap cover and in later neurovascular island flap cover given. This procedure is decades old, has definite indication in non-replantable thumb amputation.
Materials & Methods:
Study period -From JUNE 2010 to MAY 2011
INDICATIONS-1.Crush injury of thumb
2.Nonreplantable injury of thumb 3.Patient not willing for toe transfer

Centre–Dept of Plastic and Reconstructive Surgery

Total cases–
Four adult male patients, All are right handed individual
Included cases:
Working spot injuries, Road traffic accidents
Degloving soft tissue with distal amputations (or) complete amputations

Methods:
Bone graft taken from amputated part, all soft tissues with periosteeum of amputated part were removed, cut ends were trimmed. Bone graft fixed with two 1.5mm K’ wires passed from distal to proximal in longitudinal direction with amputated stump. Tubed Pedicle groin flap cover measuring 12cms(L) x 6cms (W) from ipsilateral side was given flap attachment given with "v" cut on flap. Flap division done at 4th week after selective arterial delay done at end of the 3rd week. In later stage (after 3 months) – Littlers neurovascular island flap from ulnar side of middle finger was given to restore the sensation in the thumb

Advantages -
1.Immediate reconstruction 2.Bone graft from amputated part, 3.No donor site morbidity for bone graft 4.Sensation restored with neurosensory island flap 5.Used in nonreplantable injuries

Disadvantages -

Results
In my study one patient had infection, which was controlled with appropriate antibiotics.

Conclusion -This procedure is not an alternative to replantable microvascular surgery, one of the choices for nonreplantable thumb injury without donor site morbidity

CUSH AMPUTATIONS
DEGLOVING INJURIES WITH AMPUTATIONS

FLAP DIVISION NEUROVASCULAR ISLAND FLAP

Littler's Neurovascular Island Flap

<table>
<thead>
<tr>
<th>Age/Sex</th>
<th>Hand Dominance</th>
<th>Cause</th>
<th>Injury Level</th>
<th>Flap Cover</th>
<th>Neurovascular Flap</th>
<th>Complication</th>
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<tbody>
<tr>
<td>35/M</td>
<td>RIGHT HAND</td>
<td>WORK SPOT INJURY</td>
<td>RT THUMB-PPX SHAFT</td>
<td>RT GROIN TUBED FLAP</td>
<td>LITTLE'S</td>
<td>INFECTION</td>
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<td>LT GROIN TUBED FLAP</td>
<td>LITTLE'S</td>
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<td>LITTLE'S</td>
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