Basal cell carcinoma (BCC)

History and examination

Management

High-risk case
- Refer to specialist in secondary care
- NHS cancer waiting time targets
- Diagnosis confirmed by specialist
- Treatment options

Low-risk case
- Consider referral to specialist
- Refer to direct enhanced services or local enhanced services
- Refer to skin cancer GP with specialist interest (GPwSI) in the community
- Treatment options

Low-risk case
- Treatment successful
- Treatment unsuccessful
- Follow-up

High-risk case
- Refer to specialist in secondary care
- Refer to skin cancer GP with specialist interest (GPwSI) in the community
- Treatment options

Follow-up

Treatments:
- Excision surgery
- Ablation
- Radiotherapy
- Mohs surgery
- Pharmacological treatment

Follow-up
1 Basal cell carcinoma (BCC) - suspected

Quick info:
Scope:
• assessment, diagnosis and treatment of basal cell carcinoma (BCC) in adults
Out of scope:
• metastatic BCC
• management of patients with increased risk of developing BCC due to genetic predisposition or immunocompromisation – these patients require:
  • further investigations
  • more intensive, earlier follow-up; and specific
  • supportive care and information
Definition:
• BCC is:
  • the most common skin cancer in:
    • Europe
    • Australia
    • the US
  • slow growing and unlikely to metastasize to distant parts of the body
Incidence:
• of BCC is:
  • 114.2/100,000 people in Wales
  • 146/100,000 people in Minnesota, USA
• increased at more than 10% per year among white people in North America
• in Australia:
  • is much higher, at 788/100,000 people
  • rose by 20% from 1985 to 1995
Risk factors:
• increasing age
• fair skin
• light coloured or red hair
• inability to tan
• exposure to solar ultraviolet (UV) radiation
• history of childhood freckling
• immunosuppression
• exposure to ionising radiation therapy
• burns and scars
• exposure to arsenic
• genetic disorders, eg:
  • Gorlin syndrome
  • xeroderma pigmentosum

References:

2 History and examination

Quick info:
• take detailed clinical history and symptomatology of lesion – changes in lesions normally become evident over period of months
• assume high index of clinical suspicion – clinical diagnostic accuracy is 59-65% even by experienced dermatologists
• types of basal cell carcinoma (BCC):
  • superficial [NICE 2010]
Basal cell carcinoma (BCC)

- nodular [NICE 2010]
- infiltrative or morphoeic [NICE 2010]
- pigmented [NICE 2010]
- basosquamous [NICE 2010]
- each type of lesion may also be ulcerated, pigmented or keratinised
- BCC may occur on sun exposed sites
- superficial:
  - plaque is:
    - often multiple [NICE 2010]
    - bright pink
    - usually well defined [NICE 2010]
    - larger than 20mm at presentation [NICE 2010]
    - erythematous [NICE 2010]
    - scaly [NICE 2010]
    - (may be) shiny or cobbled
  - slow to grow – growth may take months or years [NICE 2010]
  - generally occurs on limbs or trunk [NICE 2010]
  - may resemble Bowen's disease or inflammatory dermatoses
- nodular:
  - papule or nodule may:
    - be shiny
    - be cystic [NICE 2010]
    - be translucent (pearly) [NICE 2010]
    - be telangiectatic [NICE 2010]
    - be ulcerated [NICE 2010]
    - infiltrate deeply [NICE 2010]
  - generally occurs on head or neck or face [NICE 2010]
- infiltrative or morphoeic:
  - also known as sclerosing or infiltrative BCC [NICE 2010]
  - skin-coloured, waxy, scar-like appearance [NICE 2010]
  - generally occurs on head or neck or mid-facial sites [NICE 2010]
  - often indistinct margin
  - prone to recurrence after treatment [NICE 2010]
  - may infiltrate cutaneous nerves – known as perineural spread [NICE 2010]
- pigmented [NICE 2010]:
  - brown, blue or greyish lesion
  - may resemble malignant melanoma
- basosquamous [NICE 2010]:
  - includes mixed BCC and squamous cell carcinoma (SCC)
  - potentially more aggressive than other forms of BCC
  - margins in all types of BCC are more easily visualised by stretching the skin

References:

3 Management

Quick info:
- management depends on:
  - whether the diagnosis is uncertain or in doubt
  - the lesion is high-risk or low-risk
  - non-urgent referral is acceptable for majority of patients with suspected BCC
  - urgent referral (2 week wait) is indicated if lesion is growing rapidly or large and a more aggressive skin cancer is suspected, eg:
    - squamous cell carcinoma (SCC)
    - melanoma

Reference:
Basal cell carcinoma (BCC)


4 High-risk case

Quick info:
Patients at high-risk have:
- large tumours (more than 2cm)
- lesions on:
  - central face – near nose, eyes and mouth
  - ears
  - scalp
- poorly defined margins
- morpheic basal cell carcinomas (BCCs)
- lesions where biopsy shows:
  - infiltrative histology
  - perineural or perivascular involvement; or
  - basi-squamous features
- recurrent lesions
- immunosuppression

References:

5 Low-risk case

Quick info:
Patients at low risk have:
- small lesions
- tumours on body and limbs
- clearly defined margins
- nodular lesions
- primary (not recurrent) tumour
- immunocompetence

References:

7 Consider referral to specialist

Quick info:
NB: Patients with superficial basal cell carcinomas (BCCs) should be referred to clinicians with experience of the full range of medical treatments available, eg photodynamic therapy [NICE 2010].

There are 3 different groups of clinicians who can manage low-risk lesions [NICE 2010]:
- Group A (GPs) – defined as ‘GPs who do not have any specialist interest or training in skin cancer and perform skin surgery within the framework of the Directed Enhanced Services and Local Enhanced Services under General Medical Services or Personal Medical Services’
- Group B (Model 1 practitioners) – defined as ‘Group 3 GPs with Specialist Interests (GPwSI) in dermatology and skin surgery’ which also includes ‘GPwSI in skin lesions and skin surgery’
- Group C (Model 2 practitioners) – defined as either:
  - medical practitioners performing skin surgery in a community setting; or
Basal cell carcinoma (BCC)

- a suitably trained nurse specialist

Group A may perform skin cancer surgery provided [NICE 2010]:
- the patient is not:
  - age 24 years or younger
  - immunosuppressed or has Gorlin's syndrome
- the lesion is:
  - a primary nodular low-risk BCC
  - located below the clavicle, ie not on the head or neck
  - less than 1cm in diameter with clearly defined margins
  - not a recurrent BCC following incomplete excision
  - not a persistent BCC that has been incompletely excised according to histology
  - not morpheic, infiltrative or basosquamous in appearance
  - not located:
    - over important underlying anatomical structures, eg major vessels or nerves
    - in an area where primary surgical closure may be difficult, eg digits or front of shin
    - in an area where difficult excision may lead to a poor cosmetic result
    - at another highly visible anatomical site where a good cosmetic result is important to the patient, eg anterior chest or shoulders

NB: If the patient does not meet the above diagnostic criteria or there is any diagnostic doubt, refer the patient to the local skin cancer multidisciplinary team (LSMDT) [NICE 2010].

NB: If the lesion is thought to be a superficial BCC, the full range of medical treatments, for example photodynamic therapy, should be tried first – this may require referral to the LSMDT [NICE 2010].

NB: Incompletely excised BCCs should be discussed with a member of the LSMDT [NICE 2010].

Group B may perform skin cancer surgery provided [NICE 2010]:
- the patient is not:
  - age 24 years or younger
  - immunosuppressed or has Gorlin's syndrome
- the lesion is:
  - not on the nose and lips, which includes nasofacial sulci and nasolabial folds, or around the eyes or ears
  - not greater than 2cm in diameter below the clavicle or greater than 1cm above the clavicle, unless it is a superficial BCC that can be managed non-surgically
  - not morpheic, infiltrative or basosquamous in appearance
  - not presenting with a poorly defined margin
  - not located:
    - over important underlying anatomical structures, eg major nerves or vessels
    - in an area where primary surgical closure may be difficult, eg digits or front of shin
    - in an area where difficult excision may lead to a poor cosmetic result

NB: If the patient does not meet the above diagnostic criteria or there is any diagnostic doubt, refer the patient to the LSMDT [NICE 2010].

NB: If the lesion is thought to be a superficial BCC, the full range of medical treatments, for example photodynamic therapy, should be tried first – this may require referral to the LSMDT [NICE 2010].

NB: Incompletely excised BCCs should be discussed with a member of the LSMDT [NICE 2010].

Group C may perform skin cancer surgery provided [NICE 2010]:
- the lesion has been diagnosed by a member of the LSMDT; and
- a management plan has been prepared

NB: All skin lesion samples should be sent for histological examination [NICE 2010].

Reference:

8 NHS cancer waiting time targets

Quick info:
Basal cell carcinoma (BCC) is excluded from the current national cancer waiting time targets in England and Wales.

Reference:
Basal cell carcinoma (BCC)

12 Diagnosis confirmed by specialist

Quick info:
Diagnosis may be:
• obvious clinically; or
• require biopsy to confirm diagnosis

13 Treatment options

Quick info:
Treatment options for specialist community care include:
• superficial basal cell carcinoma (BCC) - small and low-risk site:
  • pharmacological treatment with topical imiquimod or 5-fluorouracil
  • curettage and cautery
  • cryosurgery
  • excision surgery
• nodular BCC - small and low-risk site:
  • excision
  • curettage and cautery
  • cryosurgery

Excision surgery:
• treatment of choice for most people with BCC
• 85-90% cure rate with surgical resection using 3-4mm margin
• allows pathological assessment of diagnosis and adequacy of excision
• provides generally acceptable cosmetic and functional results
• heals rapidly

Cryosurgery:
• involves destruction of tissue using liquid nitrogen:
  • prolonged freeze required
• useful for:
  • primary superficial or small lesions at low risk sites, eg trunk or limbs
  • patients where surgery is inappropriate
• has higher rate of recurrence and greater morbidity than excision

Curettage and cautery:
• involves removal of lesion and cauterisation of wound (may take some weeks to heal)
• usually 2-3 cycles of curettage and cautery necessary
• gives histological diagnosis but no guidance on margin control
• has higher rate of recurrence than excision
• useful for primary superficial and small nodular lesions at low risk sites, eg trunk and limbs

Pharmacological treatment:
• topical imiquimod (immunomodulatory) or 5-fluorouracil (cytotoxic) are licensed for treating superficial BCCs
• treatment course lasts 6 weeks
• effective treatment produces inflammatory reaction (takes some weeks to settle)
• treatment may need to be repeated and is not universally effective

Reference:

14 Treatment options

Quick info:
Treatment options for primary basal cell carcinoma (BCC) include (see table 1 BAD guidelines on management of BCC):
• monitoring [NICE 2010]
• excision surgery [NICE 2010]
• curettage and cautery [NICE 2010]
Basal cell carcinoma (BCC)

- ablation (cryotherapy, photodynamic therapy) [NICE 2010]
- radiotherapy [NICE 2010]
- Mohs surgery [NICE 2010]
- pharmacological therapy, eg topical treatment such as imiquimod [NICE 2010]
- photodynamic therapy [NICE 2010]

Main factors affecting treatment choice, include:
- body site
- clinical type of BCC
- lesion size
- histological growth pattern
- co-morbidities
- cosmetic outcome required

References:


16 Treatment unsuccessful

Quick info:
Treatment is unsuccessful if:
- histology shows incomplete excision margin
- tumour recurs after treatment

17 Follow-up

Quick info:
Follow-up:
- provide advice on preventative lifestyle measures:
  - use clothing, including hats, as primary means of protecting against sun
  - avoid direct exposure to sunlight during middle of day
  - use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25 and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  - advise against use of:
    - sunbeds
    - tanning booths
    - tanning lamps
  - advise patient to check skin regularly for new or recurrent lesions
  - more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
  - long term follow-up in primary care not required

References:


19 Excision surgery

Quick info:
Excision surgery:
- treatment of choice for most people with basal cell carcinoma (BCC)
- 85-90% cure rate with surgical resection using 3-4mm margin
- allows pathological assessment of diagnosis and adequacy of excision
- generally acceptable cosmetic and functional result
- heals rapidly

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Basal cell carcinoma (BCC)

References:

20 Curettage and cautery

Quick info:
Curettage and cautery:
• involves removal of lesion and cauterisation of wound (may take some weeks to heal)
• usually 2-3 cycles of curettage and cautery necessary
• gives histological diagnosis but no guidance on margin control
• has higher rate of recurrence than excision
• useful for primary superficial and small nodular lesions at low risk sites, eg trunk and limbs
References:

21 Ablation

Quick info:
Cryosurgery:
• involves destruction of tissue using liquid nitrogen – useful:
  • for primary superficial or small lesions at low risk sites, eg trunk or limbs
  • for patients where surgery is inappropriate
  • at sites where surgery is difficult, eg digits
  • palliation
  • higher rate of recurrence than excision
Photodynamic therapy:
• process:
  • photosensitising chemical applied to the lesion; then
  • exposed to photo-activating light source 3 hours later; then
  • tumour is destroyed by intermediate molecules in photo-activation reaction
• useful for:
  • superficial lesions
  • multiple lesions
References:

22 Radiotherapy

Quick info:
Radiotherapy is useful for:
• older patients where long-term scar deterioration may not be high priority
• patients who refuse or are unsuitable for invasive procedure
• palliation of advanced, neglected or inoperable lesions
• contra-indications:
  • Gorlin syndrome
  • xeroderma pigmentosum

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Basal cell carcinoma (BCC)

- lesions invading joints or bone
- where lesion is in poorly vascularised area
- lesion over eyelid
- previous radiotherapy at same site
- young patient
- lesion on lower leg or extremity

References:

23 Mohs surgery

Quick info:
Mohs surgery:
- highly specialised technique available at specialist centres
- 5-year cure rate approximately:
  - 99% for primary basal cell carcinoma (BCC)
  - 95% for recurrent tumours
- involves examination and mapping of tissue with horizontal sections – excision repeated until histological margins free of tumour
- examines 100% of excision margin (unlike histology of conventional excision)
- prolonged procedure under local anaesthetic
- indications lesions require surgery:
  - at high risk sites, eg:
    - central face – near nose, eyes or mouth
  - large (more than 2cm)
  - with poorly defined margins
  - recurrent
  - incompletely excised
  - high risk histological types, eg:
    - micronodular
    - infiltrating or morphoeic
    - with perineural or perivascular involvement

Every cancer network should have access to a Mohs surgery unit.
Reference:

24 Pharmacological treatment

Quick info:
Pharmacological treatment:
- topical imiquimod (immunomodulatory) or 5-fluorouracil (cytotoxic) are licensed for treating superficial basal cell carcinomas (BCCs)
- treatment course lasts 6 weeks
- effective treatment produces inflammatory reaction (takes some weeks to settle)
- treatment may need to be repeated and is not universally effective

References:
Basal cell carcinoma (BCC)


25 Follow-up

Quick info:
Expected incomplete excision rate in secondary care is approximately 5%:
• if excision is incomplete – consider further treatment
  • observation:
    • may be acceptable in certain cases where excision is incomplete at lateral margins
    • is less appropriate where deep margins are involved or with more aggressive histological features, eg:
      • micronodular
      • infiltrating or morphoeic
      • perineural or perivascular involvement
    • most patients do not require follow-up once wound healed
    • advise patient to check skin regularly for new or recurrent lesions
  • more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
  • provide advice on preventative lifestyle measures:
    • use clothing, including hats, as primary means of protecting against sun
    • avoid direct exposure to sunlight during middle of day
    • use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25 and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
    • advise against use of:
      • sunbeds
      • tanning booths
      • tanning lamps

Reference:

26 Follow-up

Quick info:
Follow-up:
• recurrence rates after curettage and cautery higher than following formal excision
• wound healing may be protracted
• advise patient to check skin regularly for new or recurrent lesions
• more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
• provide advice on preventative lifestyle measures:
  • use clothing, including hats, as primary means of protecting against sun
  • avoid direct exposure to sunlight during middle of day
  • use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25, and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  • advise against use of:
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Reference:

27 Follow-up

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Basal cell carcinoma (BCC)

Quick info:

Follow-up:

- recurrence rates after ablative therapies are higher than following formal excision
- wound healing may be protracted after ablative therapies
- advise patient to check skin regularly for new or recurrent lesions
- more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
- provide advice on preventative lifestyle measures:
  - use clothing, including hats, as primary means of protecting against sun
  - avoid direct exposure to sunlight during the middle of day
  - use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25, and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  - advise against the use of:
    - sunbeds
    - tanning booths
    - tanning lamps

References:


28 Follow-up

Quick info:

Follow-up:

- radiotherapy scarring tends to worsen with time
- advise patient to check skin regularly for new or recurrent lesions
- more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
- provide advice on preventative lifestyle measures:
  - use clothing, including hats, as primary means of protecting against sun
  - avoid direct exposure to sunlight during the middle of day
  - use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25 and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  - advise against the use of:
    - sunbeds
    - tanning booths
    - tanning lamps

Reference:


29 Follow-up

Quick info:

Expected 5 year recurrence rate following Mohs surgery is between 1-5%:

- most patients do not require follow-up once wound has healed
- advise patient to check skin regularly for new or recurrent lesions
- more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
- provide advice on preventative lifestyle measures:
  - use clothing, including hats, as primary means of protecting against sun
  - avoid direct exposure to sunlight during middle of day
  - use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25 and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  - advise against use of:
    - sunbeds
    - tanning booths
    - tanning lamps

Reference:

Basal cell carcinoma (BCC)

30 Follow-up

Quick info:

Follow-up:

• advise patient to check skin regularly for new or recurrent lesions
• more than 1 in 3 patients will develop further primary basal cell carcinomas (BCCs)
• provide advice on preventative lifestyle measures:
  • use clothing, including hats, as primary means of protecting against sun
  • avoid direct exposure to sunlight during middle of day
  • use broad spectrum sunscreen (with minimum sun protection factor [SPF] of 25, and UVA 5* rating) as adjunct to sun avoidance and other sun protective measures, providing this does not lead to increased time spent in sun
  • advise against use of:
    • sunbeds
    • tanning booths
    • tanning lamps

Reference:

Evidence summary for Basal cell carcinoma (BCC)

The pathway is based on our interpretation of the following guidelines [1], [5], [6], [8]. All of these guidelines have been graded for quality and prioritised for inclusion based on their methodological quality. All intervention nodes (ie. those concerning therapy and therapeutic advice) have been graded for the quality of the evidence underlying them. Supporting resources for key non-interventional nodes have also been listed, but have not been graded.

Search date: Sep-2005

References

This is a list of all the references that have passed critical appraisal for use in the care map Basal cell carcinoma (BCC)

<table>
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<th>Reference</th>
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It is not the function of the Chief Knowledge Officer of the NHS to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care.Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness or completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.

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