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RPLND = retroperitoneal lymph node dissection
Survivorship – Testicular Cancer: Germ Cell Seminoma Stage I Surveillance

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ELIGIBILITY

Germ cell tumors, seminoma stage I, > 2 years from treatment completion and NED

CONCURRENT COMPONENTS OF VISITS

History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Years 3-5:
  ○ AFP, beta HCG and LDH every 6 months
  ○ Testosterone, glucose, creatinine, and lipid profile annually
  ○ Chest x-ray every 6 months
  ○ CT abdomen and pelvis with contrast in year 3 and 5
  ○ Testicular ultrasound\(^1\) annually if high-risk
- After year 10:
  ○ Testosterone, glucose, creatinine, and lipid profile annually
  ○ Imaging studies as clinically indicated
- Years 6-10:
  ○ Comprehensive metabolic panel, CBC with differential, testosterone, and lipid profile annually
  ○ AFP, beta HCG and LDH as clinically indicated
  ○ Chest x-ray annually (optional)
  ○ CT abdomen and pelvis with contrast as clinically indicated

SURVEILLANCE

MONITORING FOR LATE EFFECTS

- Infertility
- Hypogonadism

Risk Reduction/Early Detection

Patient education, counseling, and screening:
- Lifestyle risk assessment\(^2\)
- Cancer screening\(^3\)
- HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm)
- Consider cardiovascular risk reduction\(^4\)

PSYCHOSOCIAL FUNCTIONING

Assess for:
- Distress management (see Distress Screening and Psychosocial Management algorithm)
- Financial stressors
- Social support
- Body image
- Onco-fertility\(^5\)

DISPOSITION

New primary or recurrent disease?

Yes

Return to primary treating physician

No

Return to primary treating physician

Continue survivorship monitoring

Refer or consult as indicated

1. Annual ultrasound of contralateral testicle if one of the following present: diagnosis of seminoma and < 30 years old when diagnosed or testicular maldescent or infertility

2. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

3. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening

4. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health

5. For additional resources consider a referral to the Adolescent and Young Adult (AYA) Clinic

AFP = alpha fetoprotein
HCG = human chorionic gonadotrophin
LDH = lactate dehydrogenase
NED = no evidence of disease

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Survivorship – Testicular Cancer: Germ Cell Seminoma Stage I Post Adjuvant Chemotherapy or Radiation Therapy

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ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Years 3-5:
  - AFP, beta HCG, and LDH every 6 months
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually
  - Chest x-ray as clinically indicated; consider CT chest with contrast if symptomatic
  - CT abdomen/pelvis with contrast annually in years 3 and 5. (CT pelvis if post-radiation therapy; CT abdomen if post-carboplatin.)
  - Testicular ultrasound annually if high-risk
- Years 6-10:
  - Comprehensive metabolic panel,
  - CBC with differential, testosterone, and lipid profile annually
  - AFP, beta HCG, and LDH annually
  - Other imaging as clinically indicated
- After year 10:
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually
  - Imaging as clinically indicated

MONITORING FOR LATE EFFECTS

- Infertility
- Hypogonadism
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

RISK REDUCTION/EARLY DETECTION

Patient education, counseling, and screening:
- Lifestyle risk assessment
- Cancer screening
- HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm)

PSYCHOSOCIAL FUNCTIONING

Assess for:
- Distress management (see Distress Screening and Psychosocial Management algorithm)
- Financial stressors
- Body image
- Social support
- Onco-fertility

DISPOSITION

Return to primary treating physician

New primary or recurrent disease?

Yes

Continue survivorship monitoring

No

Refer or consult as indicated

1. Annual ultrasound of contralateral testicle if one of the following is present: diagnosis of seminoma and < 30 years old when diagnosed or testicular maldescent, or infertility
2. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health
3. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
4. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
5. For additional resources consider a referral to the Adolescent and Young Adult (AYA) Clinic
6. AFP = alpha fetoprotein
7. HCG = human chorionic gonadotrophin
8. LDH = lactate dehydrogenase
9. NED = no evidence of disease

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Surveillance – Testicular Cancer: Germ Cell Seminoma Stage I Post Adjuvant Chemotherapy or Radiation Therapy

Germ cell tumors, seminoma stage I, > 2 years post-adjuvant radiotherapy or single-agent carboplatin and NED
Survivorship – Testicular Cancer: Germ Cell Non-Seminoma Stage I Surveillance

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**ELIGIBILITY**
- Germ cell tumors, non-seminoma stage I, > 2 years from completion of treatment and NED

**CONCURRENT COMPONENTS OF VISITS**
- History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
  - Years 3-5:
    - AFP, beta HCG, and LDH every 6 months
    - Testosterone, comprehensive metabolic panel (CMP), and lipid profile annually
    - Chest x-ray every 6 months
    - Testicular ultrasound annually if high-risk
    - CT abdomen/pelvis with contrast in year 3 and 5
  - Years 6-10:
    - CMP, CBC with differential, testosterone and lipid profile annually
    - AFP, beta HCG and LDH as clinically indicated
    - After year 10:
      - Testosterone, glucose, creatinine, and lipid profile annually
      - Imaging studies as clinically indicated

**SURVEILLANCE**
- Infertility
- Hypogonadism

**MONITORING FOR LATE EFFECTS**
- Patient education, counseling, and screening:
  - Lifestyle risk assessment
  - Cancer screening
  - HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
  - Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm)
  - Consider cardiovascular risk reduction

**RISK REDUCTION/EARLY DETECTION**
- Assess for:
  - Distress management (see Distress Screening and Psychosocial Management algorithm)
  - Financial stressors
  - Social support
  - Body image
  - Onco-fertility

**PSYCHOSOCIAL FUNCTIONING**
- Refer or consult as indicated

**DISPOSITION**
- Return to primary treating physician
- Continue survivorship monitoring
- New primary or recurrent disease?
  - Yes
  - No

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1. Annual ultrasound of contralateral testicle if one of the following present: diagnosis of seminoma and < 30 years old when diagnosed or testicular maldescent or infertility
2. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
3. Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
4. Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health
5. For additional resources consider a referral to the Adolescent and Young Adult (AYA) Clinic

AFP = alpha fetoprotein
HCG = human chorionic gonadotrophin
LDH = lactate dehydrogenase
NED = no evidence of disease

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Survivorship – Testicular Cancer: Germ Cell Non-Seminoma Stage I Post-RPLND and/or Adjuvant Chemotherapy

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ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle

- Years 3-5:
  - AFP, beta HCG, and LDH every 6 months
  - Testosterone, comprehensive metabolic panel (CMP), and lipid profile annually
  - CBC with differential annually if treated with adjuvant chemotherapy
  - Chest x-ray every 6 months
  - Testicular ultrasound1 annually if high risk
  - CT abdomen/pelvis with contrast in year 3 and 5

- Years 6-10:
  - CMP, CBC with differential, testosterone and lipid profile annually
  - AFP, beta HCG and LDH as clinically indicated
  - Chest x-ray annually
  - Other imaging as clinically indicated

- After year 10:
  - Testosterone, glucose, creatinine, and lipid profile annually
  - CBC with differential annually if treated with adjuvant chemotherapy
  - Imaging as clinically indicated

SURVEILLANCE

Germ cell tumors, non-seminoma, stage I, > 2 years post-RPLND and/or adjuvant chemotherapy completion and NED

MONITORING FOR LATE EFFECTS

- Infertility
- Cardiovascular disease2
- Hypogonadism
- Metabolic syndrome
- Neurotoxicity
- Renal insufficiency

RISK REDUCTION/EARLY DETECTION

Patient education, counseling, and screening:

- Lifestyle risk assessment3
- Cancer screening4
- HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
- Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm)

PSYCHOSOCIAL FUNCTIONING

Assess for:

- Distress management (see Distress Screening and Psychosocial Management algorithm)
- Financial stressors
- Social support
- Body image
- Onco-fertility5

DISPOSITION

New primary or recurrent disease?

Yes

Return to primary treating physician

No

Continue survivorship monitoring

Refer or consult as indicated

1 Annual ultrasound of contralateral testicle if one of the following is present: diagnosis of seminoma and less than 30 years old when diagnosed or testicular maldescent, or infertility

2 Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health

3 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

4 Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening

5 For additional resources consider a referral to the Adolescent and Young Adult (AYA) Clinic

AFP = alpha fetoprotein
HCG = human chorionic gonadotrophin
LDH = lactate dehydrogenase
NED = no evidence of disease
RPLND = retroperitoneal lymph node dissection

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Survivorship – Testicular Cancer: Germ Cell
All types, Stages II-IIIC

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History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Category 1, years 4-5 or Category 2, years 4-5:
  - AFP, beta HCG, and LDH every 6 months
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually
  - Chest x-ray every 6 months
  - CT abdomen and pelvis with contrast in year 4
  - Testicular ultrasound annually if high-risk
- Categories 1 and 2, years 6-10:
  - Comprehensive metabolic panel, CBC with differential, testosterone and lipid profile annually
  - AFP, beta HCG and LDH as clinically indicated
  - Chest x-ray annually
  - CT abdomen and pelvis with contrast every 24 months or as clinically indicated
- Categories 1 and 2, after year 10:
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually

Eligibility
- Germ cell tumors, all types, stages II – IIIC after completion of treatment and NED

Concurrent Component of Visit
- History & physical exam with each visit to include thorough exam of supraclavicular lymph nodes and contralateral testicle
- Category 1, years 4-5 or Category 2, years 4-5:
  - AFP, beta HCG, and LDH every 6 months
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually
  - Chest x-ray every 6 months
  - CT abdomen and pelvis with contrast in year 4
  - Testicular ultrasound annually if high-risk
- Categories 1 and 2, years 6-10:
  - Comprehensive metabolic panel, CBC with differential, testosterone and lipid profile annually
  - AFP, beta HCG and LDH as clinically indicated
  - Chest x-ray annually
  - CT abdomen and pelvis with contrast every 24 months or as clinically indicated
- Categories 1 and 2, after year 10:
  - CBC with differential, testosterone, glucose, creatinine, and lipid profile annually

Surveillance (both Categories 1)
- INFERTILITY
- CARDIOVASCULAR DISEASE
- NEUROTOXICITY
- METABOLIC SYNDROME
- RENAL INSUFFICIENCY
- NIH = no evidence of disease

Surveillance (both Categories 1)
- INFERTILITY
- CARDIOVASCULAR DISEASE
- NEUROTOXICITY
- METABOLIC SYNDROME
- RENAL INSUFFICIENCY
- NIH = no evidence of disease

Monitoring for Late Effects
- Infertility
- Hypogonadism
- Metabolic syndrome
- Cardiovascular disease
- Neurotoxicity
- Renal insufficiency

Risk Reduction/Early Detection
- Patient education, counseling, and screening:
  - Lifestyle risk assessment
  - HPV vaccination as clinically indicated (see HPV Vaccination algorithm)
  - Screening for Hepatitis B and C as clinically indicated (see Hepatitis B Virus (HBV) Screening and Management algorithm)

Psychosocial Functioning
- Assess for:
  - Distress management (see Distress Screening and Psychosocial Management algorithm)
  - Financial stressors
  - Social support
  - Body image
  - Onco-fertility

Disposition
- Return to primary treating physician
- New primary or recurrent disease?
- Yes
- No
- Continue survivorship monitoring
- Refer or consult as indicated

1 Category 1: germ cell tumors all types, stages II – IIIA; no evidence of disease at years 4-5. Category 2: germ cell tumors all types, stages IIIB and IIIC; no evidence of disease at years 4-5
2 Annual ultrasound of contralateral testicle if one of the following is present: diagnosis of seminoma and < 30 years old when diagnosed or testicular maldescent, or infertility
3 Consider use of Vanderbilt’s ABCDE’s approach to cardiovascular health
4 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
5 Includes colorectal, liver, lung, pancreatic, prostate, and skin cancer screening
6 For additional resources consider a referral to the Adolescent and Young Adult (AYA) Clinic

AFP = alpha fetoprotein
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SUGGESTED READINGS


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SUGGESTED READINGS - continued


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DEVELOPMENT CREDITS

This survivorship algorithm is based on majority expert opinion of the Genitourinary Survivorship workgroup at The University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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