***Title/ Topic:*** Surgical Resection of Cervical Chordoma.

***Requesters/ Authors:*** Dr. Akinduro

***Short paragraph for the methodology section****\**

Studies were identified by a medical librarian developing and running searches in the MEDLINE (1946-Present), Embase (1974-Present), Cochrane Central Register of Controlled Trials (1991-Present), and Cochrane Database of Systematic Review (2005-Present) [all via the Ovid interface], Scopus (1823-Present), Science Citation Index Expanded (1975-Present) and Emerging Sources Citation Index (2015-Present) [via the Web of Science interface] and Epistemonikos databases. Grey literature resources were also searched. There were no limits to language or publication date. Filters to remove animal studies were employed. Search terms included database-specific-controlled vocabulary (MeSH, Embase/ Emtree terms) and additional free-text terms/ keywords such as cervical chordoma, surgical resection, radiation, and radiotherapy. All databases and grey literature resources were searched on July 7, 2020. An updated search was run of all the search strategies on November 14, 2020. The full search strategies are available here: https://osf.io/jpfxt.

\* If you decide to include use this paragraph, please consider an acknowledgement or authorship for me (Tara Brigham, in this case) or another librarian who might work on a systematic review with you. Searching the literature can be an important contribution to a systematic review. Crediting the librarian in the resulting published literature demonstrates, and allows us to quantify, our scholarly contributions.

**All searching completed on July 7, 2020 with an updated search on November 14, 2020.**

***Databases searched with number of original references and number of references after de-duplication***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Database** | **Number of initial hits****[07/07/2020]** | **Number after de-duplication****[07/07/2020]** | **Number of hits & (unique hits)****[11/14/2020]** | **Number after de-duplication****[11/14/2020]** |
| 1. Ovid MEDLINE | 383 | 383 |  5 (3) | 3 |
| 2. Ovid EMBASE | 517 | 232 | 11 (10) | 7 |
| 3. Ovid Cochrane Central Register of Controlled Trials (CCRCT) | 2 | 0 | 0 (0) | 0 |
| 4. Ovid Cochrane Database of Systematic Review (CDSR) | 1 | 1 | 0 (0) | 0 |
| 5. Scopus  | 97 | 33 | 2 (2) | 1 |
| 6. Web of Science - Science Citation Index Expanded (SCI-EXPANDED) | 413 | 200 | 16 (3) | 2 |
| 7. Web of Science - Emerging Sources Citation Index (ESCI) | 15 | 5 | 3 (1) | 0 |
| 8. Epistemonikos | 9 | 0 | 0 (0) | 0 |
| Grey Literature9. ClinicalTrials.gov10. medRxiv11. NICE Evidence12. OpenGrey13. PROSPERO14. WHO ICTRP | 61* *18*
* *0*
* *12*
* *1*
* *4*
* *26*
 | 60* *18*
* *0*
* *11*
* *1*
* *4*
* *26*
 | 7- 0- 0- 0- 0- 4- 3 | 7- - - - - -  |
| ***Total*** | ***1498*** | ***914*** | ***26*** | ***20*** |

***Complete search strategy for each database and grey literature resources for the appendix.***

***1.* Ovid MEDLINE(R)** 1946 to Present and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) Daily– searched July 7, 2020.

*Update*: Ovid **MEDLINE**(R) 1946 to Present and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) Daily – date range searched: 07/01/2020 – current – searched November 14, 2020.

1. Chordoma/ or (chordoma\* or (chorda adj3 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*)) or chordosarcom\* or chordo-sarcom\*).ti,ab,oa,ot,kf,kw.

2. exp Cervical Vertebrae/ or (cervical or "C vertebr\*" or cervicodorsal or cervico-dorsal or ((craniovertebr\* or cranio-vertebr\* or craniocervic\* or cranio-cervic\* or neck) adj3 (junct\* or spine or spinal or vertebr\*))).ti,ab,oa,ot,kf,kw.

3. exp Neurosurgical Procedures/ or exp Microsurgery/ or "Surgical Procedures, Operative"/ or exp Radiotherapy/ or Re-Irradiation/ or (((gross or "sub") adj1 total\*) or gross-total\* or grosstotal\* or GTR or sub-total\* or subtotal\* or STR or macroscopic or piecemeal or debulk\* or curettage or "en bloc" or en-bloc or enbloc or intralesional or intra-lesional or spondylectom\* or surger\* or surgical or neurosurger\* or neurosurgical or microsurg\* or micro-surg\* or stereotactic or cyberknife or "cyber knife" or gammaknife or "gamma knife" or ((radical or complete\*) adj3 (resect\* or excis\* or remov\*)) or radiation\* or radiotherap\* or radio-therap\* or radiosurger\* or radio-surger\* or radiosurgical or radio-surgical or irrad\* or postirrad\* or post-irrad\* or reirrad\* or re-irrad\* or proton or "linear accelerator" or MRI-linac or linac).ti,ab,oa,ot,kf,kw. or (surgery or radiotherapy).fs.

4. 1 and 2 and 3

5. 4 not (Animals/ not (Animals/ and Humans/))

6. remove duplicates from 5

7. limit 6 to (dt=20200701-20210101)

***2.* Ovid Embase** 1974 to 2020 July 06 – searched July 7, 2020.

*Update*: Ovid **Embase** 1974 to 2020 November 13 – date range searched: 07/01/2020 – current – searched November 14, 2020.

1. chordoma/ or (chordoma\* or (chorda adj2 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*)) or chordosarcom\* or chordo-sarcom\*).ti,ab.

2. exp cervical spine/ or (cervical or "C vertebr\*" or cervicodorsal or cervico-dorsal or ((craniovertebr\* or cranio-vertebr\* or craniocervic\* or cranio-cervic\* or neck) adj2 (junct\* or spine or spinal or vertebr\*))).ti,ab.

3. exp neurosurgery/ or exp spine surgery/ or cancer surgery/ or surgical technique/ or surgical approach/ or curettage/ or reoperation/ or exp microsurgery/ or surgical patient/ or exp radiosurgery/ or exp radiotherapy equipment/ or exp radiotherapy/ or (((gross or "sub") adj1 total\*) or gross-total\* or grosstotal\* or GTR or sub-total\* or subtotal\* or STR or macroscopic or piecemeal or debulk\* or curettage or "en bloc" or en-bloc or enbloc or intralesional or intra-lesional or spondylectom\* or surger\* or surgical or neurosurger\* or neurosurgical or microsurg\* or micro-surg\* or stereotactic or cyberknife or "cyber knife" or gammaknife or "gamma knife" or ((radical or complete\*) adj2 (resect\* or excis\* or remov\*)) or radiation\* or radiotherap\* or radio-therap\* or radiosurger\* or radio-surger\* or radiosurgical or radio-surgical or irrad\* or postirrad\* or post-irrad\* or reirrad\* or re-irrad\* or proton or "linear accelerator" or MRI-linac or linac).ti,ab.

4. 1 and 2 and 3

5. 4 not ((exp animal/ or nonhuman/) not exp human/)

6. remove duplicates from 5

7. limit 6 to dc=20200701-20210101

***3.* Ovid EBM Reviews - Cochrane Central Register of Controlled Trials** May 2020 – searched July 7, 2020.

*Update*: Ovid EBM Reviews - **Cochrane Central Register of Controlled Trials** 1991 to October 2020 – date range searched: 01/01/2020 – current – searched November 14, 2020.

1. (chordoma\* or (chorda adj3 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*)) or chordosarcom\* or chordo-sarcom\*).ti,ab.

2. (cervical or "C vertebr\*" or cervicodorsal or cervico-dorsal or ((craniovertebr\* or cranio-vertebr\* or craniocervic\* or cranio-cervic\* or neck) adj3 (junct\* or spine or spinal or vertebr\*))).ti,ab.

3. (((gross or "sub") adj1 total\*) or gross-total\* or grosstotal\* or GTR or sub-total\* or subtotal\* or STR or macroscopic or piecemeal or debulk\* or curettage or "en bloc" or en-bloc or enbloc or intralesional or intra-lesional or spondylectom\* or surger\* or surgical or neurosurger\* or neurosurgical or microsurg\* or micro-surg\* or stereotactic or cyberknife or "cyber knife" or gammaknife or "gamma knife" or ((radical or complete\*) adj3 (resect\* or excis\* or remov\*)) or radiation\* or radiotherap\* or radio-therap\* or radiosurger\* or radio-surger\* or radiosurgical or radio-surgical or irrad\* or postirrad\* or post-irrad\* or reirrad\* or re-irrad\* or proton or "linear accelerator" or MRI-linac or linac).ti,ab.

4. 1 and 2 and 3

***4.* Ovid EBM Reviews - Cochrane Database of Systematic Reviews** 2005 to July 02, 2020 – searched July 7, 2020.

*Update*: Ovid EBM Reviews - **Cochrane Database of Systematic Reviews** 2005 to November 13, 2020 – date range searched: 01/01/2020 – current – searched November 14, 2020.

1. (chordoma\* or (chorda adj3 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*)) or chordosarcom\* or chordo-sarcom\*).ti,ab.

***5.* Scopus** Date range: 1823-07/07/2020 – searched July 7, 2020.

*Update*: **Scopus** Limited results 2020 to present – searched November 14, 2020.

( ( TITLE-ABS-KEY ( chordoma\* OR ( chorda W/3 ( tumor\* OR tumour\* OR neoplas\* OR cancer\* OR carcinoma\* OR malignan\* OR metast\* ) ) OR chordosarcom\* OR chordo-sarcom\* ) ) AND ( TITLE-ABS-KEY ( cervical OR "C vertebr\*" OR cervicodorsal OR cervico-dorsal OR ( ( craniovertebr\* OR cranio-vertebr\* OR craniocervic\* OR cranio-cervic\* OR neck ) W/3 ( junct\* OR spine OR spinal OR vertebr\* ) ) ) ) AND ( TITLE-ABS-KEY ( ( ( gross OR "sub" ) W/1 total\* ) OR gross-total\* OR grosstotal\* OR gtr OR sub-total\* OR subtotal\* OR str OR macroscopic OR piecemeal OR debulk\* OR curettage OR "en bloc" OR en-bloc OR enbloc OR intralesional OR intra-lesional OR spondylectom\* OR surger\* OR surgical OR neurosurger\* OR neurosurgical OR microsurg\* OR micro-surg\* OR stereotactic OR cyberknife OR "cyber knife" OR gammaknife OR "gamma knife" OR ( ( radical OR complete\* ) W/3 ( resect\* OR excis\* OR remov\* ) ) OR radiation\* OR radiotherap\* OR radio-therap\* OR radiosurger\* OR radio-surger\* OR radiosurgical OR radio-surgical OR irrad\* OR postirrad\* OR post-irrad\* OR reirrad\* OR re-irrad\* OR proton OR "linear accelerator" OR mri-linac OR linac ) ) ) AND NOT ( ( PMID ( 0\* ) OR PMID ( 1\* ) OR PMID ( 2\* ) OR PMID ( 3\* ) OR PMID ( 4\* ) OR PMID ( 5\* ) OR PMID ( 6\* ) OR PMID ( 7\* ) OR PMID ( 8\* ) OR PMID ( 9\* ) ) )

***6*. Web of Science** Core Collection: Citation Indexes

* **Science Citation Index Expanded (SCI-EXPANDED)** --1975-present

Data last updated: 2020-07-06 – searched July 7, 2020.

*Update*: **Web of Science** Core Collection: **Science Citation Index Expanded** (SCI-EXPANDED) – 1975 to present.

Data last updated: 2020-11-13. Limited results to 2020 to present – searched November 14, 2020.

|  |  |
| --- | --- |
| #5 | #3 AND #2 AND #1 **Refined by:** **PUBLICATION YEARS:** ( 2020 )*Indexes=SCI-EXPANDED Timespan=All years* |
| # 4 | #3  AND  #2  AND  #1  Indexes=SCI-EXPANDED Timespan=All years |
| # 3 | TS=(((gross or  "sub")  NEAR/1  total\*)  or  gross-total\*  or  grosstotal\*  or  GTR  or  sub-total\*  or  subtotal\*  or  STR  or  macroscopic  or  piecemeal  or  debulk\*  or  curettage  or  "en  bloc"  or  en-bloc  or  enbloc  or  intralesional  or  intra-lesional  or  spondylectom\*  or  surger\*  or  surgical  or  neurosurger\*  or  neurosurgical  or  microsurg\*  or  micro-surg\*  or  stereotactic  or  cyberknife  or  "cyber  knife"  or  gammaknife  or  "gamma  knife"  or  ((radical or complete\*)  NEAR/3  (resect\* or excis\* or remov\*) )  or  radiation\*  or  radiotherap\*  or  radio-therap\*  or  radiosurger\*  or  radio-surger\*  or  radiosurgical  or  radio-surgical  or  irrad\*  or  postirrad\*  or  post-irrad\*  or  reirrad\*  or  re-irrad\*  or  proton  or  "linear  accelerator"  or  MRI-linac  or  linac)  Indexes=SCI-EXPANDED Timespan=All years |
| # 2 | TS=(cervical or  "C  vertebr\*"  or  cervicodorsal  or  cervico-dorsal  or  ((craniovertebr\* or cranio-vertebr\* or craniocervic\* or cranio-cervic\* or neck)  NEAR/3  (junct\* or spine or spinal or vertebr\*) ))  Indexes=SCI-EXPANDED Timespan=All years |
| # 1 | TS=(chordoma\* or  (chorda NEAR/3 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*) )  or  chordosarcom\*  or  chordo-sarcom\*)  Indexes=SCI-EXPANDED Timespan=All years |

***7*. Web of Science** Core Collection: Citation Indexes

* **Emerging Sources Citation Index (ESCI)** --2015-present

Data last updated: 2020-07-06 – searched July 7, 2020.

*Update*: **Web of Science** Core Collection: **Emerging Sources Citation Index** (ESCI) --2015-present

Data last updated: 2020-11-13. Limited results to 2020 to present – searched November 14, 2020.

|  |  |
| --- | --- |
| #5  | #3 AND #2 AND #1 **Refined by:** **PUBLICATION YEARS:** ( 2020 )*Indexes=ESCI Timespan=All years* |
| # 4 | #3  AND  #2  AND  #1  Indexes=ESCI Timespan=All years |
| # 3 | TS=(((gross or  "sub")  NEAR/1  total\*)  or  gross-total\*  or  grosstotal\*  or  GTR  or  sub-total\*  or  subtotal\*  or  STR  or  macroscopic  or  piecemeal  or  debulk\*  or  curettage  or  "en  bloc"  or  en-bloc  or  enbloc  or  intralesional  or  intra-lesional  or  spondylectom\*  or  surger\*  or  surgical  or  neurosurger\*  or  neurosurgical  or  microsurg\*  or  micro-surg\*  or  stereotactic  or  cyberknife  or  "cyber  knife"  or  gammaknife  or  "gamma  knife"  or  ((radical or complete\*)  NEAR/3  (resect\* or excis\* or remov\*) )  or  radiation\*  or  radiotherap\*  or  radio-therap\*  or  radiosurger\*  or  radio-surger\*  or  radiosurgical  or  radio-surgical  or  irrad\*  or  postirrad\*  or  post-irrad\*  or  reirrad\*  or  re-irrad\*  or  proton  or  "linear  accelerator"  or  MRI-linac  or  linac)  Indexes=ESCI Timespan=All years |
| # 2 | TS=(cervical or  "C  vertebr\*"  or  cervicodorsal  or  cervico-dorsal  or  ((craniovertebr\* or cranio-vertebr\* or craniocervic\* or cranio-cervic\* or neck)  NEAR/3  (junct\* or spine or spinal or vertebr\*) ))  Indexes=ESCI Timespan=All years |
| # 1 | TS=(chordoma\* or  (chorda NEAR/3 (tumor\* or tumour\* or neoplas\* or cancer\* or carcinoma\* or malignan\* or metast\*) )  or  chordosarcom\*  or  chordo-sarcom\*)  Indexes=ESCI Timespan=All years |

***8.* Epistemonikos** - searched on July 7, 2020

*Update*: **Epistemonikos** – searched November 14, 2020.

Full query: (title:((title:(chordoma OR chordomas OR "chorda tumor" OR "chorda tumour" OR chordosarcoma OR chordo-sarcoma) OR abstract:(chordoma OR chordomas OR "chorda tumor" OR "chorda tumour" OR chordosarcoma OR chordo-sarcoma)) AND (title:(cervical OR "C vertebral" OR cervicodorsal OR cervico-dorsal) OR abstract:(cervical OR "C vertebral" OR cervicodorsal OR cervico-dorsal)) AND (title:(gross-total OR grosstotal OR gtr OR sub-total OR subtotal OR str OR macroscopic OR piecemeal OR debulking OR curettage OR "en bloc" OR en-bloc OR enbloc OR intralesional OR intra-lesional OR spondylectomy OR surgery OR surgical OR neurosurgery OR neurosurgical OR microsurgery OR micro-surgery OR stereotactic OR cyberknife OR "cyber knife" OR gammaknife OR "gamma knife" OR radiation OR radiotherapy OR radio-therapy OR radiosurgery OR radio-surgery OR radiosurgical OR radio-surgical OR proton OR "linear accelerator" OR mri-linac OR linac) OR abstract:(gross-total OR grosstotal OR gtr OR sub-total OR subtotal OR str OR macroscopic OR piecemeal OR debulking OR curettage OR "en bloc" OR en-bloc OR enbloc OR intralesional OR intra-lesional OR spondylectomy OR surgery OR surgical OR neurosurgery OR neurosurgical OR microsurgery OR micro-surgery OR stereotactic OR cyberknife OR "cyber knife" OR gammaknife OR "gamma knife" OR radiation OR radiotherapy OR radio-therapy OR radiosurgery OR radio-surgery OR radiosurgical OR radio-surgical OR proton OR "linear accelerator" OR mri-linac OR linac))) OR abstract:((title:(chordoma OR chordomas OR "chorda tumor" OR "chorda tumour" OR chordosarcoma OR chordo-sarcoma) OR abstract:(chordoma OR chordomas OR "chorda tumor" OR "chorda tumour" OR chordosarcoma OR chordo-sarcoma)) AND (title:(cervical OR "C vertebral" OR cervicodorsal OR cervico-dorsal) OR abstract:(cervical OR "C vertebral" OR cervicodorsal OR cervico-dorsal)) AND (title:(gross-total OR grosstotal OR gtr OR sub-total OR subtotal OR str OR macroscopic OR piecemeal OR debulking OR curettage OR "en bloc" OR en-bloc OR enbloc OR intralesional OR intra-lesional OR spondylectomy OR surgery OR surgical OR neurosurgery OR neurosurgical OR microsurgery OR micro-surgery OR stereotactic OR cyberknife OR "cyber knife" OR gammaknife OR "gamma knife" OR radiation OR radiotherapy OR radio-therapy OR radiosurgery OR radio-surgery OR radiosurgical OR radio-surgical OR proton OR "linear accelerator" OR mri-linac OR linac) OR abstract:(gross-total OR grosstotal OR gtr OR sub-total OR subtotal OR str OR macroscopic OR piecemeal OR debulking OR curettage OR "en bloc" OR en-bloc OR enbloc OR intralesional OR intra-lesional OR spondylectomy OR surgery OR surgical OR neurosurgery OR neurosurgical OR microsurgery OR micro-surgery OR stereotactic OR cyberknife OR "cyber knife" OR gammaknife OR "gamma knife" OR radiation OR radiotherapy OR radio-therapy OR radiosurgery OR radio-surgery OR radiosurgical OR radio-surgical OR proton OR "linear accelerator" OR mri-linac OR linac))))

Results: 9

**Grey Literature** – all resources searched on July 7, 2020. *Update*: all resources searched November 14, 2020.

***9.*** ClinicalTrials.gov <http://www.clinicaltrials.gov/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Condition or disease: Chordoma | 51 | 14 | 53 | 0 |
|  | Other terms: Chordomas | 56 | 4 | 58 | 0 |
| Total |  |  | 18 |  | 0 |

***10.*** medRxiv <https://www.medrxiv.org/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Chordoma | 5 | 0 | 5 | 0 |
|  | Chordomas | 5 | 0 | 5 | 0 |
|  | chordrosarcoma  | 0 | 0 | 0 | 0 |
|  | "chorda tumor" | 0 | 0 | 0 | 0 |
| Total |  |  | 0 |  | 0 |

***11.*** NICE Evidence <https://www.evidence.nhs.uk/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Chordoma | 77 | 12 | 77 | 0 |
|  | chorda tumor | 4 | 0 | 4 | 0 |
|  | cervical chondrosarcoma | 27 | 0 | 26 | 0 |
| Total |  |  | 12 |  | 0 |

***12.*** OpenGrey <http://www.opengrey.eu/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Chordoma | 2 | 0 | 2 | 0 |
|  | Chordomas | 3 | 1 | 3 | 0 |
|  | chorda tumor | 0 | 0 | 0 | 0 |
|  | chordrosarcoma  | 0 | 0 | 0 | 0 |
| Total |  |  | 1 |  | 0 |

***13.*** PROSPERO <https://www.crd.york.ac.uk/prospero/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Chordoma | 9 | 3 | 11 | 2 |
|  | Chordomas | 4 | 1 | 6 | 2 |
|  | chorda tumor | 0 | 0 | 0 | 0 |
|  | chordrosarcoma  | 1 | 0 | 0 | 0 |
| Total |  |  | 4 |  | 4 |

***14.*** WHO ICTRP <http://apps.who.int/trialsearch/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Search terms** | **# total results****(07/07/20)** | **# relevant/ non-duplicate results****(07/01/20)** | **# total results****(11/14/20)** | **# relevant/ non-duplicate results****(11/14/20)** |
|  | Chordoma | 70 records (66 trials) | 26 | 74 records (70 trials) | 3 |
| Total |  |  | 26 |  | 3 |